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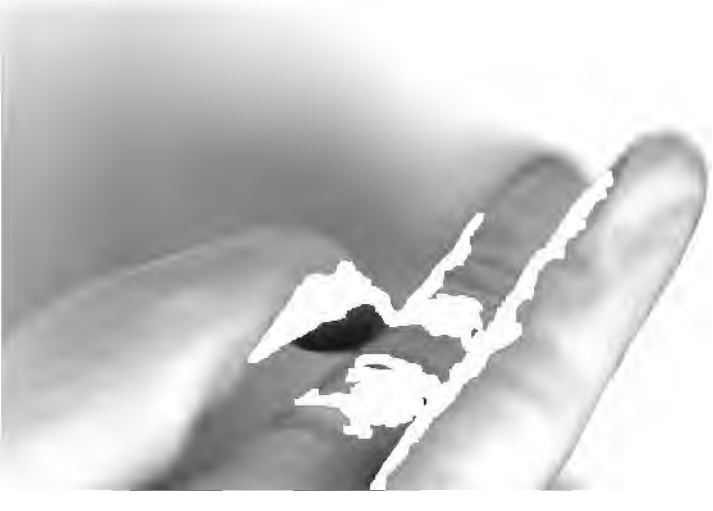
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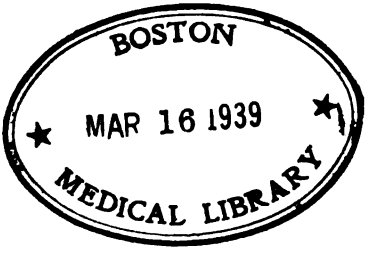
OBSTETRICAL JOURNAL

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EDITOR AND PROPRIETOR

VOLUME XII
JANUARY—JUNE, 1898

NEW YORK
1898





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THE AMERICAN GYNÆCOLOGICAL AND OBSTETRICAL JOURNAL.

JANUARY, 1898.

DISPLACEMENTS OF THE UTERUS FROM THE STANDPOINT OF TREATMENT; WITH SPECIAL REFERENCE TO THE MANAGEMENT OF DISLOCATIONS FORWARD AND BACKWARD.*

By W. Easterly Ashton, M.D.,

Professor of Gynæcology, Medico-Chirurgical College, Philadelphia.

In considering displacements of the uterus from the standpoint of treatment, we must divide all malpositions into those which are of primary and into these which are of secondary importance. Thus, if a displacement is caused by a tumor pushing or to adhesions pulling or it is associated with a pelvic lesion, then the position of the womb becomes a secondary consideration, and the case, from the standpoint of treatment, is no longer one of uterine displacement.

Viewed, therefore, in the light of this classification, the treatment of uterine displacements narrows itself down to a consideration of only those which are of primary importance.

First. The uterus may be displaced as a whole in an anterior, posterior or a lateral direction. Again, there may be descent or ascent of the organ. All of these displacements, with the exception of the prolapses, are of secondary importance, being due to tumors pushing or to adhesions pulling. They are, therefore, not to be included in those cases of malposition of the uterus which claim our attention as primary conditions.

Second. The uterus may be displaced by version or flexion in

* Read before the Philadelphia Obstetrical Society, Nov. 4, 1897.

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tain the secondary effect of the heat upon the blood vessels and tissues of the pelvis. The patient should be placed in the dorsal recumbent posture in order that the water may come in direct contact with the vaginal vault and the lower segment of the uterus.

The icthyol tampons are used three times a week. They are made of cotton-wool soaked in a ten-per-cent. solution of icthyol in glycerine. The tampon should be kept in position for twenty-four hours and removed on the following morning.

The General Treatment and Hygiene.—Attention should be given to the general condition of the patient. The bowels must be kept regular, the digestion looked after and such tonic treatment administered as may be indicated in each case.

Careful directions should be given to the patient as to exercise, rest and the care of the skin. It is also of utmost importance that the clothing should be so arranged that the weight of the skirt falls upon the shoulders and not, as is the general rule, upon the abdomen, thus crowding the viscera and pushing the fundus of the uterus back toward the sacrum. In other words, the object sought in the general treatment is to put the patient's health in the best possible condition so that the uterine ligaments may regain their tone along with the general system.

The treatment of a recent case should be persevered with for at least one year. If, at the end of this period, the ligaments of the uterus have not regained their normal sustaining powers, then the case must be regarded as chronic and treated accordingly.

The treatment of chronic retro-displacements of the uterus is operative. The use of a pessary may in some cases effect a symptomatic cure, but the displacement will recur so soon as the instrument is withdrawn. The pessary, therefore, should only be employed when the patient refuses operative measures. It should also be distinctly understood that the treatment is in no sense of the word a radical cure. Adhesions or a tender condition of the pelvis are absolute contra-indications to the use of the pessary.

The operation I advise for the radical cure of chronic retro-displacements of the uterus is ventral attachment. I know of no operation in the whole range of abdominal and pelvic surgery more brilliant in its results. The operation is practically without danger to life and is not followed by any bad results in subsequent pregnancies or labors.

I am well aware in making this statement that it is directly opposed to the views held by many surgeons as is shown by the papers

and editorials which have lately appeared on the subject. If, however, the statistics upon which these views are based be carefully examined, it will be found that the bad results have been due to a faulty technique and not to the operation. In the first place, a large number of operators do not employ the best technique, and in the second place, some surgeons are careless in mechanical adjustment of parts. Unless the operation be performed with skill and with the proper technique bad results are almost sure to follow. On the other hand,

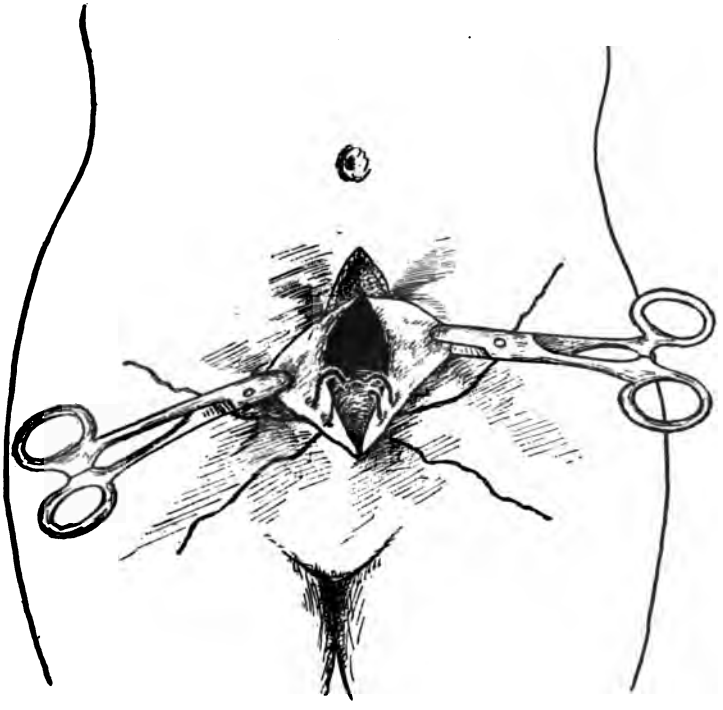


FIG. 1. The Attachment Sutures in position. The Flaps held apart by the Forceps are the Peritonæum.

however, a skilful surgeon, following the proper technique, will never meet with subsequent trouble during gestation or labor.

It is always necessary first to remove all the causes and results of a retro-displacement before doing a ventral attachment. Thus, if the cervix is torn it must be restored to its normal condition so that the uterus may undergo complete involution. Again, all tears in the perinæum or in the pelvic floor must be repaired, so as to give to the

organs of the pelvis their normal support. Finally, if endometritis is associated with the displacement, the uterus must be thoroughly curetted if the discharge is profuse or purulent.

The operation is divided into six stages, as follows:

1. The abdominal incision.
2. Bringing the fundus of the uterus anteriorly.
3. Introducing the attachment sutures.
4. Introducing the sutures which prevent the stripping of the peritonæum from the abdominal wall.
5. Tying the attachment sutures.
6. Closing the abdominal wound.

1. *The Abdominal Incision.*—The incision through the abdominal wall begins in the median line one inch above the sympysis pubis,

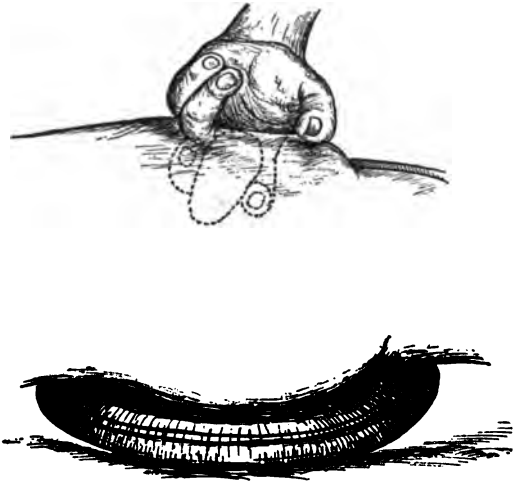


FIG. 2. The Index and Middle Finger of the Left Hand holding the Fundus in position for the Introduction of the Attachment Sutures.

and extends upward for a length of two and one-half inches. This length of incision gives ample room for all the necessary manipulations. If the abdominal wall is fat the incision through the skin and superficial fascia may be made as long as required, but the opening through the aponeurosis must not be over two and one-half inches.

2. *Bringing the Fundus of the Uterus Anteriorly.*—After the incision has been made through the abdominal wall the index and

middle fingers of the left hand are carried down to the promontory of the sacrum and pushed gently between the uterus and the rectum; the fundus is then pulled forward into its normal position. If the uterus is movable, it is an easy matter to insert the fingers between it and the rectum, but if the organ is adherent the adhesions must be



FIG. 3. The Same as Fig. 1. Looking down from above.

carefully broken up before an attempt is made to pull the fundus forward.

3. *Introducing the Attachment Sutures.*—We are now ready to introduce the attachment sutures. It is important that the needle is of the right size and shape, and that the silk is of the proper thickness. I use a braided silk, No. 7, made by Ellwood Lee & Company, of Conshocken, Pennsylvania. The needle is slender, full half-curved, with a diameter of less than one-half of an inch (see small needle, Fig. 8). Pulling the peritonæum at the lower angle of the incision into the wound, the first suture is introduced about one-half of an inch from its divided edge on the left side. (See Fig. 1.)

The index and middle fingers of the left hand are now passed into the abdominal cavity, and the fundus of the uterus held in position for the introduction of the suture. (See Figs. 2 and 3.)



FIG. 4. The Four Dots on the Fundus of the Uterus mark the position of the Entrance and Exit of the Attachment Sutures.

The suture is introduced into the fundus directly in the center of the median line dividing the uterus antero-posteriorly (see Figs. 1 and 4). It is buried one-quarter of an inch deep into the uterine tissue, with a distance of about one-half of an inch between the points of entrance and exit. The uterus is now released and the suture

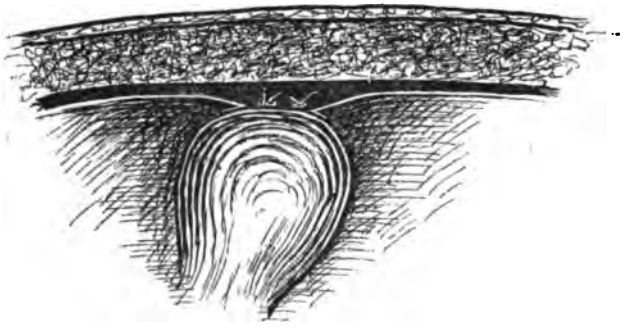


FIG. 5. Showing the Stripping of the Peritonæum.

passed through the peritonæum on the opposite side (see Fig. 1). The second suture is passed through the peritonæum on the left side, one quarter of an inch above the first suture (see Fig. 1). It is then passed through the fundus of the uterus one-quarter of an inch be-

hind the first suture (see Figs 1 and 4) and then carried through the peritonæum on the opposite side (see Fig. 1).

It is not necessary to hold the fundus in position with the fingers in introducing the second suture as traction upon the free ends of the first suture pulls the uterus securely against the abdominal incision. Both attachment sutures are now in place, and their free ends, on both sides, are grasped with a small pair of forceps to prevent them from becoming tangled.

4. *Introducing the Sutures which Prevent the Stripping of the Peritonæum from the Abdominal Wall.*—This step in the operation is

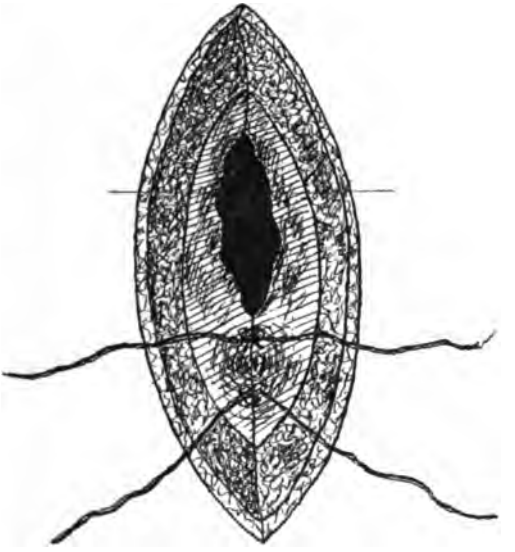


FIG. 6. Shows the Position or the Three Sutures which prevent the Stripping of the Peritonæum.

of great importance, as the weight of the uterus dragging upon the peritonæum after the attachment sutures have been tied will strip it off from the abdominal wall to a greater or less extent. (See Fig. 5.)

To prevent this the first three sutures closing the abdominal incision are introduced so as to include the peritonæum at the points of attachment (see Fig. 6.) When these sutures, along with the others closing the incision, are tied the peritonæum is held in close contact with the abdominal wall at the point of attachment.

5. *Tying the Attachment Sutures.*—The free ends of the attachment sutures are now released from the grasp of the forceps and traction

made upon them. This brings the fundus of the uterus in direct contact with the peritonæum. The sutures are now tied and the free ends cut close to the knots (see Figs. 5 and 7).

6. *Closing the Abdominal Incision.*—The last step in the operation is to introduce the remaining sutures necessary to close the abdominal incision. As the incision is two and one-half inches long, and as I use three sutures to the inch four more are necessary for this purpose.

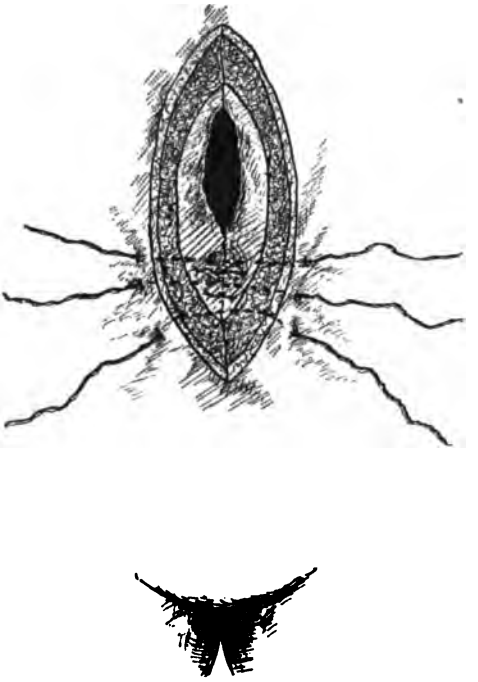


FIG. 7. The Attachment Sutures tied. They include only the Peritonæum and Uterine Tissue.

The sutures being in place, we begin by tying first those at the lower angle of the wound, as they control the peritonæum at the point of attachment. The dressings are now applied and the operation is completed.

As the result of the technique of this operation there is developed, in the course of a few weeks, a small band or ligament, about one to one and a half inches long, half an inch wide, and one-eighth of an inch thick, between the uterus and abdominal wall, which admits of

great mobility, so that the organ is readily acted upon by intra-abdominal pressure. Again, the newly-formed ligament holds the uterus in a normal position without holding it closely attached to the abdominal wall. Furthermore, the second attachment suture, being posterior to the median line dividing the fundus antero-posteriorly, pulls the uterus somewhat anteflexed, which is its normal position.

The technique of this operation is the same as employed by Kell, Penrose and others, except that I do not introduce the sutures into the peritonæum as Kelly does or include, like Penrose, a few of the fibres of the muscle. Again, the three sutures which control the stripping of the peritonæum, which I have added to

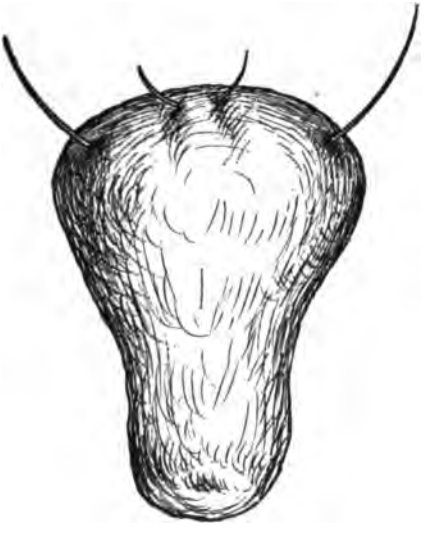


FIG. 8. Shows the Correct and Incorrect Method of introducing the Uterine Attachment Sutures, Posterior View.

the technique, are of great importance. If the peritonæum becomes separated from the abdominal wall a pocket results, which may become filled with blood and cause inflammation, resulting in a firm and immovable union between the fundus of the uterus and the abdomen.

If the technique of this operation is thoroughly carried out, it is almost impossible for any bad results to follow in subsequent pregnancies and labors. The uterus is pulled close to the abdominal wall in a fixed and immovable position, but it is held by a delicate ligament which allows great freedom in its movements, easy expan-

sion in all directions during pregnancy and a normal presentation of the fœtus during labor.

The bad results which are reported following the operation of ventral attachment of the uterus are due to the fact that the majority of operators use an incorrect method and introduce the sutures with a large, heavy, curved needle, entering the uterus near the oviduct and coming out on the opposite side in the same position. (See Fig. 8.)

The aim of the incorrect technique is to secure a broad, firm attachment of the fundus to the abdominal wall. The sutures also include the peritonæum, muscles and aponeurotic fascia and are tied over the aponeurosis and remain buried. Naturally this results in a firm and lasting union, and consequently the evil results lately reported in papers and editorials are almost certain to follow.

From a large experience in the operation of ventral attachment I have no hesitation in saying that it is the most satisfactory treatment we have for the cure of chronic retro-displacements of the uterus. I believe, furthermore, when this operation is properly appreciated by the profession, that many cases of so-called nervous prostration and other conditions, causing chronic invalidism will be permanently cured and a large number of women restored to health.

DIVISION OF THE UTERO-SACRAL LIGAMENTS AND SUSPENSIO-UTERI FOR IMMOBILE RETRO-POSITION WITH ANTEFLEXION.*

By W. L. Burrage, A.M., M.D.,

Visiting Gynæcologist to the St. Elizabeth's and Carney Hospitals; Surgeon to Out Patients' Free Hospital for Women, Boston.

By immobile retroposition with anteflexion is meant a uterus situated as a whole in the back of the pelvis and so changed from the normal in shape as to be bent forward either in the neck, in the body, or in both and at the same time impossible of replacement. The condition is to be found in the text-books under the heading of Anteflexion. Mention is made that in some cases the utero-sacral

*Read before the Obstetrical Society of Boston, Oct. 19, 1897.

ligaments are shortened and thickened, but the faulty position that the uterus as a whole occupies in the pelvis is generally not referred to. B. S. Schultze, however, under the title of Pathological Anteflexion describes and figures the combination of pathological conditions very closely in accordance with the views of the writer. Figure 1, taken from his book on "Displacements of the Uterus," shows diagrammatically the relation of the parts.

The writer's interest in the treatment of anteflexion was revived several years ago by the unsatisfactory results obtained in the cases



FIG. 1. Shows diagrammatically the Relation of the Parts.

of this affection that were treated by dilatation, curetting and gauze drainage. It was made plain to him that although this energetic method of treatment was generally effective in relieving the symptoms for a longer or shorter period of time in given cases, that after a number of months the symptoms returned.

Having formerly had a considerable experience in observing the results of the treatment of anteflexion by some of the most noted

gynæcologists with vaginal pessaries, stem pessaries, posterior division of the cervix and Dudley's operation, and having found them all ineffectual, the writer was led to examine cases of anteflexion with more care. As a result, he has come to the conclusion that the chief cause of the condition he calls retroposition with anteflexion, forming a very large proportion of all cases of anteflexion, is a shortening of the utero-sacral ligaments, and that the principal reason that it is impossible to permanently remove the flexure from an anteflexed uterus is the fact of the shortness of these ligaments.

The operations described in this paper were hit upon in the course of abdominal operating in a hospital service. After noting the ease with which the utero-sacral ligaments could be divided from the vagina it was only necessary to divide them from the abdomen to find that the procedure was quite as feasible by the latter route.

To describe the condition of retroposition with anteflexion more in detail I shall quote from B. S. Schultze. He says: (Loc. Cit., page 166) "Pathological Anteflexion is one of the most common of the diseases of woman and in far the greater number of cases is the result of parametritis posterior." Also (page 161) "As long ago as 1850, Sommer insisted upon the importance of the shrinking of perimetric exudations (exudations found below the peritonæal investment, therefore according to our nomenclature parametric) in causing infractions and flexions of the uterus." And (page 160) "The stability of the flexion of the uterus may depend on causes either situated in the organ itself or acting upon it from without. Of these, the former diminish or destroy the normal flexibility, and give rise to rigidity of the angle of flexion. Metritis, which otherwise causes rigid extension of the uterus, causes rigidity of the previous flexible flexion if it attacks a uterus fixed in anteflexion. * * * Atrophy of the tissue at the seat of the normal flexion is not altogether rare, and is commonly a secondary result of acute flexion of long standing, but the very exceptional cases of flexion in the body of the uterus, and in the cervix can, from their nature, only depend upon a partial contraction of the uterine wall." "Stability of the anteflexion is much more commonly due to causes lying outside the uterus."

Schultze takes strong ground against the view that retroposition with anteflexion is of congenital origin, holding that in no single one of all the conditions in the adult which have been described as congenital anteflexion, is there internal evidence sufficient to

prove that the condition depends on any anomaly existing before birth.

The condition we are describing would seem to be a persistence of some of the characteristics of the puerile uterus, a post-fœtal lack of development. Figure 2 shows the puerile uterus diagrammatically. The following is what Schultze says about this condition: "The uterus of a child consists, as is well known, of a comparatively large cervix, the direction of which differs little from that of the vagina, and a comparatively small corpus uteri which is so united to the cervix as to be very flexible. In the bodies of new-born children the organ is generally found in anteflexion, and very rarely in

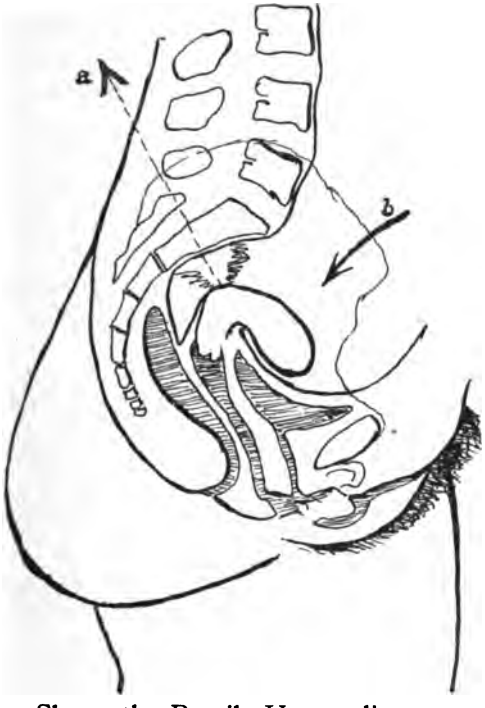


FIG. 2. Shows the Puerile Uterus diagrammatically.

retroflexion. The uterus, which sometimes preserves the childish shape longer than usual, even until puberty, may permanently retain it in young women, whose sexual development is in any way interfered with. This anomaly in the shape of the uterus, this retention of the form normal during childhood, is met with in connection with deficient size of the organ, and other post-fœtal arrests

in the development of the genital organs. In other cases the organ is not deficient in size, but the shape of the cervix and the vaginal portion had in childhood, is retained, and the vagina itself and more especially the anterior vaginal wall, is often decidedly short."

In comparing Figure 1 with Figure 2, we notice the greater length of the vagina in Figure 1, and that the region of the internal os is much nearer the sacrum in this figure. In retroposition with anteflexion the length and shape of the intra-vaginal cervix varies in individual cases as does the degree of flexion. The seat of flexion is generally at the region of the internal os and it is difficult to see the clinical importance of distinguishing flexures of the body from flexures of the neck.

In considering the causation of retroposition with anteflexion it is only necessary to suppose a uterus having the puerile characteristics held in the back of the pelvis by the shrinking of inflammatory exudate involving the utero-sacral ligaments, *i. e.*, held at the region of the internal os. It is plain that from the direction of the intra-abdominal pressure, shown in the figure by the arrow, the body of the uterus must necessarily be carried forward. The excursion of the cervix backward as a result of the forward pressure on the body is limited by the curve of the rigid sacrum (the uterus being held very near to it) and by the attachments of the vagina to the cervix, therefore the uterus is anteflexed.

From the fact that stenosis of the uterine canal at the point of flexure has not been a feature in a large majority of the cases of anteflexion seen by the writer, although many exhibited the well-known pin-hole os externum, and from the fact that many competent observers have noted that when a sound is passed into an anteflexed uterus during a violent attack of dysmenorrhœa the withdrawal of the sound is not followed by the passage of blood or clot, the writer is inclined to put little faith in the obstructive dysmenorrhœa theory, and to believe that the cause of the dysmenorrhœa, from which patients with this malformation suffer, is due rather to the uterine engorgement and accompanying endometritis and the inability of the uterus to be relieved of its congestion.

The theories advanced to explain the ætiology of retro-position of the puerile type have been many and varied, *e. g.*, constipation, with the passage of masses of hard fæces between the utero-sacral ligaments; tight lacing, causing an increase in the intra-abdominal pressure on the posterior surface of the body of the uterus, etc., but none of them are capable of proof.

Immobile retroposition with anteflexion is seen following labor and abortion, and from posterior adhesions from tubo-ovaritis and hæmatocele. This class of cases is much easier to account for than the puerile class of cases, but I am inclined to think that when the cul-de-sac comes to be more carefully inspected from the abdomen that traces of past inflammatory action in that region will be more often found.

It has been my experience that in retroposition with anteflexion one generally finds either one or both ovaries prolapsed and enlarged and that endometritis is almost invariably present.

To treat this condition successfully, attended as it generally is by dysmenorrhœa, scanty menstruation or profuse flowing, pelvic pains, frequent abortions or sterility in the married, chronic constipation, bladder irritability and leucorrhœa, has been a problem that has well nigh baffled solution at the hands of the most eminent gynæcologists. It is probable that if pregnancy supervenes before the tissues at the point of flexure in the uterus have become sclerosed and permanently fixed, and before the endometritis has gotten well settled in the uterus, that the flexure will be lastingly removed and the utero-sacral ligaments permanently stretched in a majority of cases, although cases are on record *e. g.*, a case reported by W. Moseley, Transactions of the American Gynæcological Society, Vol. 16, page 548, where the deformity has returned after labor.

Relief of the pelvic congestion, which, in my estimation, stands in a direct causal relation to the symptoms, has been successfully sought by the use of emmenagogues, cathartics, massage, hot douches, tampons, vaginal suppositories, leeches, electricity, pessaries, and, more radically, by curetting and gauze drainage. These measures are sometimes sufficient to stimulate the uterus to a more healthy development, but too often the uterus, with its strong posterior guys, remains as before, and it is only a question of time when the pelvic congestion and its resulting endometritis return. The attempts to permanently stretch the posterior ligaments of such uteri by packing the vagina have now been pretty generally abandoned. So also Schultze's forcible massage with the patient anæthetized is thought to involve too great risk to the integrity of the ovaries and tubes. The operation for anteflexion devised by Dr. E. C. Dudley, of Chicago, an operation which I formerly performed several times, now seems to me to be wrong in principle because it does not aim to do away with the cause of the deformity,

namely, the traction exerted by the shortened utero-sacral ligaments.

The Alexander operation on the round ligaments, intra-abdominal shortening of the round ligaments, and suspensio-uteri are by themselves contra-indicated because of the immobility of the uterus.

It is plain that the longer the malposition of retroposition with anteflexion is allowed to persist the greater the chance of sterility and of permanent impairment of function of all the pelvic organs through the results of the chronic congestion, viz.: endometritis, oöphoritis, salpingitis, trigonitis and cystitis, and proctitis. It is of the treatment of the intractable cases, cases that have not yielded to the ordinary modes of treatment, that this paper has to do, and it is my purpose to describe a method of dealing with them that has given the best of immediate results in my hands. It is in brief as follows: Dilatation of the uterine canal with curetting, and abdominal section. A short incision is made, the utero-sacral ligaments are divided in sight at the points where they leave the posterior uterine wall, the uterus is suspended to the parietal peritonæum and transversalis fascia by sutures of chromicized catgut passing through the anterior face of the fundus, and the abdominal wound is closed by layer suturing of the same material. By attaching the anterior fundus to the belly wall the direction of the intra-abdominal pressure on the body of the uterus is changed from a faulty to a more nearly normal one.

My cases number nine. The operations have all been done in the last few months, and the results have been so extremely satisfactory that I make bold to offer them now to the profession, not as indicating final conclusions on the subject but rather as a promising means of treating a hitherto baffling class of cases.

Before proceeding to a description of the steps of the operation it is proper that a few words should be said as to the treatment of those cases of retroposition with anteflexion in which the ovaries are quite normal to the feel as regards size, and are normally placed with reference to the uterus. These cases it has been my custom to treat by curetting the uterus for the relief of the endometritis and for asepsis; posterior colpotomy and division of each short utero-sacral ligament after rolling it into view in the vagina on the operator's finger, and an Alexander operation on the round ligaments, all at one sitting. The results by this method have been satisfactory.

As has been already indicated, it has been the experience of the writer that a majority of cases of this malposition have, in addition, some abnormal condition of one or both ovaries, generally prolapse with cystic degeneration of one ovary, and more commonly the right one. The prolapsed ovary usually has an elongated ovarian ligament and with this condition the Alexander operation is not effective in securing an approximately normal position of the ovary. In performing suspensio-uteri the ovarian ligament may be shortened at the same time that the uterus is suspended. By doing celiotomy one is enabled to diagnose and treat ovarian and tubal diseases and but one incision instead of two is necessary. As far as subsequent pregnancies are concerned one would prefer the Alexander to suspensio-uteri, but, suspensio-uteri done in the fashion to be described, is, in my opinion, attended with little or no risk of dystocia, and in cases where the ovaries are prolapsed or diseased is the operation of choice. Ventral fixation with permanent sutures through muscle and fascia is not allowable in child-bearing women.

Suppose we have to do with a case of retroposited ante-flexed uterus, the utero-sacral ligaments shortened and thickened, one ovary enlarged and prolapsed on the pelvic floor and the uterus the seat of endometritis. My manner of treating such a case is as follows: The cervix is dilated and the uterine cavity curetted thoroughly, special attention being given to the region of the internal os to remove any valve-like ring of tissue at that point that may interfere with drainage. The cavity is irrigated with salt solution and swabbed out with pure carbolic acid.

A short median abdominal incision, from five to seven centimetres long, according to the thickness of the abdominal walls, is then made. The tissues are divided in the linea alba and the peritonæum opened. Each ovary and tube is then carefully palpated, drawn through the incision and inspected. The intestines are walled off with handkerchiefs of sterile gauze, cysts in the ovaries are punctured with the cautery, a slightly diseased tube with closed ostium abdominale is resected, a badly diseased ovary is removed with or without its tube, or a partially diseased ovary resected, every effort being made to preserve some ovarian tissue. A reef is taken in the long ovarian ligament of a prolapsed ovary by attaching the ligament at the point of its insertion into the ovary to the posterior uterine body just above the uterine insertion of the ligament by one or two stitches of chromicized catgut. This procedure insures

against future ovarian prolapse, a condition against which suspensio-uteri alone does not provide.

A curved, round-pointed needle with carrying thread is next passed deeply through the anterior face of the fundus uteri, taking a bite about two centimeters broad. This stitch serves to hold up the uterus and to tighten the utero-sacral ligaments while they are being divided and also to draw through the suspending ligatures later.

Careful preparation for the operation, ensuring an undistended state of the intestines, is to be insisted upon, and in this connection I wish to caution operators that in women of very stout build, and in those patients in whom by previous insufficient preparation the intestines are inflated with gas and the intra-abdominal pressure correspondingly great, division of the ligaments by sight is an extremely difficult procedure. On one case, not included in my list, where both of these conditions obtained, I cut the tightened ligaments by touch, instead of by sight. There must have been a good deal of oozing following the cutting, for there was a boggy-feeling mass in the cul-de-sac after the operation that prolonged the convalescence several weeks, though the patient ultimately made a good recovery.

After dividing the ligaments it is always advisable to inspect the region of Douglas' cul-de-sac and be assured that there is no bleeding before closing the abdomen.

To divide the utero-sacral ligaments a broad, flat spatula in the hands of the assistant, the patient being in the Tredenlenburg posture, holds back the gauze covered intestines, and the utero-sacral ligaments, put on the stretch by the upward traction on the uterus, are brought into view. They are seen as two tense, white bands coming from the pelvic wall at the region of the second piece of the sacrum and meeting on the posterior aspect of the uterus in the form of a pointed arch with its apex at about the level of the internal os. Each ligament is cut with a small knife at the place where it leaves the uterus, by a minute incision at right angles to the long axis of the ligament, the operation amounting to a tenotomy where possible. The toughness of the structure of some ligaments has been a noticeable feature of many of my cases, and although the utero-sacral ligaments are described in the anatomies as consisting of muscular and cellular tissue and folds of peritonæum, when they are being divided they cut as if made up of fibrous tissue covered with thin and normal appearing peritonæum.

The uterus, freed from behind, springs forward and a lozenge-shaped raw surface is left where each ligament is divided. On two or three occasions it has seemed best to close the raw surfaces by transverse sutures to the peritonæum, thus lengthening the line of the ligament, but, as a rule, these may be disregarded. In one case only was there considerable oozing, and this was controlled by a stitch. If the cutting is not too extensive there should be little or no oozing, for no vessel of any size is severed.

If the ligaments are not much shortened and thickened strong massage will occasionally serve to stretch them sufficiently. Division is, however, generally surer. The suspension of the uterus is next completed by passing the needle attached to the carrying thread, already piercing the uterine wall, through a wide margin of the peritonæum and transversalis fascia on one side of the lower angle of the abdominal wound. Another needle is used to carry the other end of the carrying thread through the opposite side of the wound and the thread is used to draw through a strand of chromicized catgut (St. John Leavens' No. 3). A similar stitch is carried through the top of the fundus near the insertion of the round ligaments and through the peritonæum and transversalis fascia about one centimeter above the first stitch. Before tying the ligatures the peritonæum on the fundus and the parietal peritonæum is roughened by scratching with a needle. The ligatures are tied, not too snugly, after sponging the anterior cul-de-sac of the peritonæum. After removing the gauze, lowering the patient, and rearranging the intestines and omentum, the peritonæum is closed with a running catgut stitch and then the linea alba is dissected out after the method of La Torre, of Rome, with the object of bringing the bellies of the recti in apposition and thus affording muscular union. The muscles are sutured with two or three interrupted stitches of number three chromicized catgut, each stitch catching up the peritonæum. The fascia is closed with a continuous stitch of the same catgut and the skin with a subcutaneous right-angled stitch of silk-worm gut shotted at either end where it projects through the skin. No attention is paid to the fatty layer. The subcutaneous stitch is removed in three weeks. At the end of this time I have invariably found the uterus suspended in good position in the pelvis, the ovaries in good position, the cul-de-sac free, primary union in the abdominal wound, and the flexion nearly or quite gone from the uterus. The patients suffer little or no pain after this form of suspensio-uteri, in marked contrast to the pain following operations done by the method

of fixation where muscle and fascia as well were included in permanent ligatures. On account of the method of suturing the abdominal wound no abdominal supporter is employed.

An analysis of the records of the nine operations done for this malposition shows that in seven, ranging in age from twenty to thirty-one years, the condition was of the puerile type. In three of these seven there had been a history of antecedent pelvic inflammation; in two, four years before, and in the other, ten years before. It is to be said, however, that in only one of these three was there any visible evidence in the peritonæum of former inflammation. In two cases the malposition presumably followed labor, three and five years previously, respectively, and in one, abortion four years before. In the last case there was marked disease of the ovaries and tubes with adhesions. The duration of the symptoms had been fifteen years, or over, in three of the puerile cases, in the others for periods ranging from six months to eight years. The right ovary was prolapsed in five of the cases, both ovaries in two, and the ovaries were in good position in the remaining two. So much for statistics, which are not of very great value in such a small number of cases.

No attempt is made to indicate the remote anatomical or symptomatic results, nor in what manner patients who have been subjected to this operation pass through subsequent labor, nor the position of the uterus after such labor. Time and observation will determine these facts. If this paper serves to call the attention of the profession anew to the treatment of retroposition with anteflexion, which has long been the bête noir of gynæcological treatment and to point out that the malposition and malformation which cause in many women a life of suffering and sterility, may be rectified by dividing the utero-sacral ligaments and suspending the uterus, as described, my object will have been attained.

IMPROVED TECHNIQUE IN OPERATION FOR INTRALIGAMENTOUS CYST, WITH PRESENTATION OF SPECIMEN.

By Rufus B. Hall, A.M., M.D.,

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Intraligamentous or sessile cysts of the ovary have always been of greatest interest to the abdominal surgeon. Before Miner, in 1869, described his method of dealing with them by enucleation, the operation for their removal was one of the gravest in abdominal surgery. If the case were not abandoned as inoperable, the cyst was laid open and stitched to the abdominal wall. This was followed by a long period of sepsis with but few recoveries. Miner's method was a great advance in abdominal surgery. He opened the capsule where there were the fewest blood vessels. He stripped it far up over the tumor to a point where the vessels were small, to prevent loss of blood before he commenced enucleation in the pelvis. He then enucleated from the crest toward the uterus as much as possible, leaving the attachment to the uterus to be tied as a pedicle. After enucleation, he brought the capsule together, bringing it out through the wound and tying off the superflous portion of it.

The technique was improved later by dividing the capsule at the point where it would reach the abdominal parieties, and enucleating from without inward. This was found to work very well in some cases, those where the adhesions were not very firm. In the greater number it is impossible to commence at the outer border and enucleate to the uterus. The surgeon proceeds little by little. He has to tie or clamp many bleeding vessels. Enucleation is carried on from side to side, from in front and from behind, tying and clamping until nothing is left but the uterine attachment. When the operation is completed, the patient, as a rule, has lost a great quantity of blood, for the main blood supply, that from the uterus, has not been cut off during all this manipulation. Nor is it possible to cut it off in this method of operating. From personal experience I am convinced that there is a vast difference in cases, in the density of the adhesions to the pelvic floor. I have on several occasions

enucleated cysts holding from one to two gallons of fluid with a third or a half of the bulk in the folds of the broad ligament, in a few minutes and with but very little loss of blood. On other occasions I have met with similar sized tumors where the adhesions were so firm it was almost impossible to separate them by dry dissection. These cysts burrow deep into the broad ligament, dipping down into the pelvis in close relation with the ureters, the rectum and the iliac vessels, and consequently require most careful enucleation. More than one patient has died on the table from loss of blood in this operation. Goodell says, "These are the patients that die on the table." "No cases in surgery demand more coolness, pluck and judgment on the part of the operator and none put his resources so much to the test." Any operator can thoroughly appreciate the truth of these statements. He is always relieved when he finishes his operation and has the source of hæmorrhage under control. After the cyst was enucleated, the peritonæum was stitched together over the raw surface and the pelvis drained, or it was stitched to the abdominal wound and drained. If the patient did not die from hæmorrhage she usually recovered.

The fact that a large per cent. of these cysts contain papillomatous growths, makes it incumbent upon the operator to enucleate them entirely and not to leave portions of the cyst wall behind. Where a portion has been left there is usually a recurrence followed by death in a few months.

I am strongly inclined to believe that the mortality from operation for intraligamentous cyst is very much higher than is apparent from the statistics available. There is a disinclination to put on record fatal cases. I know of a number which have never been tabulated. Only a small number of these cases ever come to one operator. If I can trace among my friends who operate unrecorded fatal cases the presumption is strong that the mortality is higher than we now believe.

It is well known that a large per cent. of the cases that die, die from hæmorrhage, either on the table or within a few hours after they are put to bed. I am convinced that the technique I propose will convert this into practically a bloodless operation, thereby saving many lives. This is the operation I propose in all cases where the cyst is not loosely attached; that is, where it cannot be easily stripped from the pelvic floor. First tap the cyst and empty it. Ligate the ovarian artery on the tumor side at the pelvic border. Ligate the ovarian artery on the opposite side, outside the healthy

ovary. Divide the broad ligament. Divide the peritonæum above the top of the bladder and push the bladder down. Ligate the uterine artery on the healthy side. Cut across the cervix and clamp or ligate the uterine artery on the tumor side. The blood supply is then cut off and the patient has not lost a drachm of blood. The



FIG. 1. Anterior Aspect of Tumor.

capsule of the tumor can now be divided above the top of the bladder and at a suitable point behind and the tumor enucleated from below upward with very much greater ease than from above downward, and with corresponding safety to the ureter, the rectum

and the iliac vessels. Close the peritonæum over the pelvic floor with running suture of catgut. You can see every part of the field of operation. You separate the adhesions along the line of cleverage, as it were, in place of against it, as in the old method. In the



FIG. 2. Posterior Aspect of Tumor.

case I shall report it was next to impossible to separate the adhesions from above downward. It took longer to separate the adhesions from above over a space half the size of my hand than it did to enucleate the entire tumor, a space ten times as large, after the blood supply was cut off. The ureter was laid bare for a distance of four

or five inches. It could be seen and was easily pushed aside. This could not have been accomplished with ease and certainty by the old method.

Mrs. B., aged forty-eight, mother of two children, youngest aged sixteen, Jackson, O., referred by Dr. Holcomb, was admitted to my private hospital, September 2, 1897.

I saw the patient in consultation at her home in June, 1897. She had been confined to her bed most of the time for several months, but was able to sit up for a few minutes. She could take liquid nourishment but only very little solid food. She gave a history of having suffered from diarrhœa for six or seven years, with gradual loss of flesh and strength during the past year. She had an abdominal tumor somewhat larger than an adult head, which had developed within a year.

I advised immediate operation. They took it under advisement, and I heard nothing more from them until a few days before she entered the hospital. The Doctor then wrote me they were ready for the operation, but he thought she was so feeble it was out of the question.

When she entered the hospital she had been unable to take any food for three weeks except a spoonful or two at a time of the blandest liquid nourishment. More than this, the stomach would reject. She was unable to sit up. The emaciation was extreme. She had always been a thin woman, never weighing more than 105, but now her weight would not exceed 75 pounds, and was probably less than that. I have never seen any one dying of tuberculosis who was emaciated to such a degree. She was having from ten to fifteen liquid stools a day, of not more than two or three ounces at a time, with a horribly fetid odor. The abdomen was enlarged to about the size of a full-term pregnancy.

Physical examination gave all the signs of unilocular ovarian cyst, but when the patient was on her back the abdomen flattened out to a much greater degree than I have ever seen in that condition. The flanks bulged considerably. The change of position did not change the area of dullness.

Vaginal examination revealed the uterus drawn up out of the pelvis to the right side. Through the thin abdominal wall I could feel the uterine body above the right groin. The cervix could scarcely be touched above the pubic arch. The tumor filled the entire pelvic cavity, displacing the top of the vagina somewhat to the patient's right. This led me to suspect either peritonæal tuber-

culosis or an intra-ligamentous cyst. The clinical history of long-continued diarrhœa, great emaciation and the fact that for several months she had had fever ranging from normal to 101 and occasionally 102, favored the diagnosis of tubercular encysted dropsy. I had never seen a case of tuberculosis with effusion where the uterus was drawn up out of the pelvis. On the other hand, I had never seen an ovarian cyst where the abdomen and cyst were so flaccid.

She was so ill that for a week after her admission we did not expect her to live from one day to the next. Her mind wandered like a patient suffering from typhoid fever; especially was this true during sleep, when she would talk and pick at the bed clothing. At the end of a week she retained her nourishment better and her mental condition improved.

I told her husband there would be little hope for her with any operation now, and should it prove to be a complicated operation she would almost certainly die. It was evident that without operative interference there was no hope for her. However, the patient's condition had become so desperate that she and her friends were anxious for anything that offered relief.

The operation was made September 13, and the specimen here presented removed. After she was on the operating table I was still in doubt as to the correct diagnosis. The preponderance of evidence was in favor of tubercular peritonitis. I opened the abdomen and found a thin-walled cyst, as you will see, holding nearly two gallons of fluid, with more than one-third of the cyst in the folds of the broad ligament. I started to make the operation in the usual way by tying the ovarian artery on the outside of the tumor and enucleating it. I had not separated a place as large as half my hand when I was convinced that if I continued in the ordinary way the patient would bleed to death long before I could finish the enucleation. In her enfeebled condition she could not stand even the ordinary loss of blood from such an operation. A previous hasty examination showed the intimate attachment of the cyst to the uterus itself, precluding any possibility of enucleation from that side without greater loss of blood. To make the operation with the least loss of blood and in the shortest possible time was the great consideration in the case if we were to save her, or even to get her off the table alive. Before the operation commenced she had a pulse of 148 to 160 and temperature from 99° to 101°. I decided to make a hysterectomy so as to cut off the blood supply from the tumor before enucleating

it. This I did, according to the method already outlined in my paper.

For four or five days after the operation it was doubtful whether or not she would survive. She did not fully rally for five days and was only semi-conscious during this time. Her temperature remained below 98.6° during these days. We sustained her by hypodermic injections of strychnia and digitalin and gave stimulants and such liquid nourishment as we could get her to take. She had a slow and tedious convalescence. The diarrhœa was hard to control and the digestion feeble. She gained gradually, and at the end of six weeks from the time of the operation was able to go home, a distance of nearly two hundred miles, thoroughly convalescent and with every prospect of a permanent recovery.

Description of the Photographs.

The specimen is somewhat shriveled. It has been in the preserving fluid two months. I have had two photographs taken with the tumor distended with water. No. 1 represents the anterior aspect of the tumor. No. 2 represents the posterior aspect. On No. 1 you will easily recognize the tumor as the mass at the right. Left of it is the uterus, and projecting from the left side of the uterus is the other ovary and tube. You will observe the trochar mark between the two forceps which are close together, closing the opening. The dark line running across the photograph just below the points of these forceps, shows where we divided the capsule of the tumor and dissected it out of the broad ligament. The continuation of this dark line is shown on No. 2.

625 Crown Street.

ON THE PATHOLOGY OF STUMP-EXUDATES AFTER SALPINGECTOMY.*

By Emil Ries, M.D.,

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The usually smooth and rapid recovery of long series of patients after removal of the uterine appendages for inflammatory disease

* Read before the Chicago Pathological Socitey, November, 1897.

has often filled the laparotomists with proud satisfaction and the pleasant anticipation of having achieved permanent cures. Such anticipations have frequently been doomed to meet with disappointment. Schauta, for instance, reports (*Verh. d. Deutsch. Gyn. Ges.*, 1895), that an investigation of the remote results of his operations proved that no more than 56 per cent. of his cases were really cured, while the rest had more or less troublesome symptoms. Chrobak *Wein klin. Wochenschr.*, 1893 and 1894), reports 67 per cent. of cures, while the rest of his cases were not much benefited by the operation. The causes of these unsatisfactory results are manifold. One of the most important causes—the stump-exudates—will find a new explanation in the observations which I shall lay before you.

Stump-exudates were found by Schauta (l. c.) in 28 cases out of his 172 salpingoöphorectomies. They have been found even more frequently by other observers and in my own experience I have repeatedly found them to be at the bottom of troublesome symptoms months after the operation. They occur bilaterally or unilaterally after bilateral or unilateral salpingectomy. They are observed immediately after the operation or they may originate a shorter or longer time after the operation. They produce pain sometimes so severe that the patient is unable to attend to her work; in some cases the pain is even worse than it was before the operation. The exudates are found around the stumps of the removed tubes and vary in size from a barely palpaple thickening of the uterine horn to the size of a hen's egg or larger.

As an explanation of the formation of these tumors Schauta (l. c.) offered the following two possibilities:

1. The inflammatory process creeps on through the uterine wall into the surrounding parametric and perimetric tissue; and

2. Germs were present in the broad ligament at the time of the operation (though no actual observations could be offered as evidence of this), the connective tissue of the broad ligament was laid bare by the operation, and in this way the germs could invade the peritonæum.

Though these explanations did not meet with any opposition, it cannot be overlooked that we have no observations bearing out the correctness of these hypotheses. Besides, I cannot help feeling that they are very artificial.

I had the good fortune of getting for microscopic examination three uteri which were removed months or years after one or both tubes had been removed. The examination of the tubal stumps in

these cases, which was begun with a different subject in view, gave results which, unexpected as they were, cast a strong light on the pathogenesis of the stump-exudates.

The cases are the following:

Case 1. Mrs. J., twenty-four years old. Seven months previously a left pus-tube and ovary had been removed. A sinus remained which would not close. Besides, patient has an ovarian abscess the size of a fist and hydrosalpinx on the right side. Uterus adherent all over, forming part of the wall of the sinus. I operated September 28, 1896. Laparotomy. Removal of ovarian abscess, hydrosalpinx, uterus, excision of sinus which leads toward the right crista ilei and terminates in an abscess which contains five silk ligatures. Recovery.

The stump of the tube which had been removed seven months previously is excised and examined in a series of sections embracing the entire stump up to the interstitial portion of the tube. The cavity is open throughout. The epithelium is the usual low columnar epithelium of this portion of the tube and stops at the surface of the stump without investing the cut surface of the stump. No threads to be found in the stump.

Case 2. Miss W., twenty-five years old. Several years ago removal of both tubes and right ovary. Now chronic pelviperitonitis and adherent retroflexion. Operation by Dr. W. H. Rumpf, on December 8, 1896. Vaginal hysterectomy.

Both tubal stumps are examined in series. They are perfectly permeable, though the cavity is very narrow. Epithelium well preserved up to the abdominal opening of the stump. Besides, the left tube contains some epithelial ducts outside the circular muscular layer of the tube, one of which enters the circular muscular layer itself but does not show any communication with the tubal cavity (remnant of the Wolffian body). No threads to be found in the stump.

Case 3. Mrs. H. Several years ago removal of both tubes and ovaries. Since then development of fibroids in the uterus; 1897, vaginal hysterectomy (Dr. F. Henrotin). Both tubal stumps are cut in series of sections and contain an open cavity clear up to the abdominal opening of the stump, the epithelium being well preserved. No threads to be found in the stumps.

The observation that the stumps of the tubes did not become occluded was somewhat of a surprise to me. I had expected to find the stumps impermeable, and I had never met in literature with any

statement to the contrary. The literature on this subject, however, is not at all extensive. The only statement I could find concerning the condition of the tubal stumps after salpingectomy is made by Gottschalk in a paper on castration atrophy of the uterus (*Arch. f. Gyn. Vol.* 53, 1897). Gottschalk reports that in a case in which the tubes had been removed on account of bilateral pyosalpinx in March, 1893, he had to extirpate the uterus in April, 1896, on account of exhausting watery discharge. In his description of the specimen we are interested in the following statement: "The tubal cavity shows mere agglutination and loss of epithelium just at the point of ligation. From this point to the uterus the tubal cavity has remained open. The uterine orifice of the tube was also open." Gottschalk does not state where the point of ligation was and what was the condition of the tubal cavity external to the point of ligation. It would be interesting to learn something about this point as well as about the method after which the salpingectomy was performed.

At all events, Gottschalk's communication proves that my observations must not be generalized without further investigations. The cases seem to differ. In some the tubal cavity becomes occluded; in others it does not. Presumably, the technique of the operation has something to do with this difference, though at present we are not in a condition to say how much. If the uterine end of a tube is broken off in the course of the removal of a tube, as happens frequently in cases where the tubal tissue is chronically inflamed and infiltrated, it is often unnecessary to put any ligatures on the stump. In these cases there is a greater probability of the tubal cavity remaining open. I could not find out whether this occurrence had taken place in the three cases which I have reported above. Cauterizing the stump will hardly suffice to bring about complete occlusion. If the tubal stump is ligated with silk the thread remaining on the stump for a long time may, by pressure atrophy, bring about complete occlusion, while catgut perhaps will be absorbed before pressure atrophy of the mucous membrane has been effected. Stitching the peritonæum over the tubal stump, or better even, excising a wedge of uterine tissue with the tube and closing the uterus with sutures through its muscular tube.

My observation that the tubal cavity may remain patulous after salpingectomy appears to give a simpler and more rational explanation of the origin of stump-exudates than any other theory hitherto

offered. It is clear that the tubal lumen remaining open, infection ascending from the uterus finds ready access to the peritonæum through the open tubal stump just as primarily the infection spread from the uterus along the tubal mucosa into the peritonæum. This latter process causes perisalpingitis, perioöphoritis, perimetritis, the conditions so frequently associated with tubal inflammation, and a perisalpingitis forming around a tubal stump is exactly the condition which is clinically termed a stump-exudate. These observations explain also the difference between two classes of cases, one class being characterized by the occurrence of the stump-exudate during the convalescence from the operation, in the other class the stump-exudate occurring months after the operation. In the first class the infection has spread through the open tube from the uterus which contained infectious material at the time of the operation and could not be made completely aseptic. In the second class of cases the uterus has been healthy or was made aseptic at the time of the operation, but the uterus is infected and the infection spreads through the open tubal stump after the patient has left the hospital.

If, after removal of the tube its stump can remain open it is not only possible that an infection spreads through it, but an ovum may pass through the patulous stump and pregnancy take place. And, in fact, the modern literature contains a number of cases which are almost experimental evidence of the possibility of the tubal stump remaining open after salpingectomy. Such cases are published in the Transactions of the American Gynæcological Society for 1896, and in the American Journal of Obstetrics, 1897.

Case 1. Gordon (*Tr. Am. Gyn. Soc.*, 1896, p. 104). In March, 1894, as the author thinks, complete removal of both tubes and ovaries on account of menorrhagia and dysmenorrhea. Both ovaries were large and flabby; no other pathological condition recorded. Menstruation continues. June, 1895, last menstruation. March, 1896, patient delivered of a healthy child. Nothing is said with regard to the technique of forming a stump, except that the tube was ligated.

Case 2. Sutton (*ibid*, p. 109). October, 1892, removal of a multilocular ovarian tumor from right side, pedicle severed with thermocautery, ligature passed close to the uterine horn. Removal of a cyst from left side, pedicle severed with scissors, ligature same as on right side. The material used for ligature is not mentioned. June, 1894, patient confined of a boy weighing 10½ pounds. February, 1896, patient confined of a boy of 8 pounds. Nothing special

is said concerning the tube, but, concluding from the usual condition of the pedicle of ovarian tumors, we must assume that the tube participated in the formation of the pedicle and was also removed.

Case 3 is described by Ill (*Am. Journ. Obstet.*, April, 1897, p. 532). December, 1894, removal of bilateral ovarian tumors. A small piece of ovarian tissue was left in the right stump. Twice afterward normal menstruation, then pregnancy and normal confinement. The author adds: "It must be apparent that the tube may slip from the constricting ligature and thus remain patulous." He gives no detailed description of the technique observed.

It is worth mentioning that in the three cases quoted here the indication for the operation was not given by inflammatory disease of the tubes but by benignant tumors, therefore no formation of stump-exudate and the occurrence of pregnancy. If the tubes are removed on account of inflammatory disease the formation of stump-exudates will usually prevent pregnancy. That explains why pregnancy has never been described after removal of both tubes for inflammatory disease though of late it has become quite a routine practice to leave the ovaries if at all feasible.

A case which has some bearing upon the questions discussed here is published in a recent number of the *Centralblatt fuer Gynaekologie*, 1897, No. 40. Fritsch reports here that in a case of laparotomy for fibroid he enucleated the fibroid and then in order to make the patient sterile he put a silk ligature around the middle part of each tube without severing the tubes. Three years later the woman became pregnant and was confined normally. In this case Fritsch assumes that the thread cut through and a new communication between the abdominal and the uterine end became established at the point of the ligature. After the observations given above it must be regarded as possible that the thread cut through and a new orifice of the tube became established at the point of ligation, and that the ovule entered the tube at this point, not passing through the fimbriated end at all. After his experience with this case Fritsch has come to the conclusion that in order to make the patient sterile it is necessary to excise about one centimeter of tube at a distance of about two centimeters from the uterine horn and to ligate the ends of the tube with catgut. I am afraid that this is no safer than his first method. My observations on the condition of the tubal stumps after salpingectomy tend to prove that cutting and ligating the tubes does not necessarily bring about occlusion of the tubes.

This subject is apt to prove of some additional importance since

Kehrer, of Heidelberg, proposed (*Centralblatt für Gynaekologie*, 1897, No. 31), to make women sterile by cutting and ligating the tubes in cases where a future pregnancy is undesirable for some reason. As the new operation of vaginal cœliotomy permits of very easy access to the tubes without making an abdominal incision this method of producing sterility may come into widespread use. I think it necessary to emphasize with special reference to my observations on the tubal stumps after salpingectomy that it is necessary to occlude the tubes by sowing the peritonæum over the stumps, or, better still, bringing muscular and peritonæal coats together. The suggestion of Beuttner, of Geneva (*Centralblatt für Gynaekologie*, 1897, No. 40), is correct in this point, though I agree with him neither in his opinion that it is better to make an occlusion at the abdominal end of the tube instead of selecting the uterine end nor in his statement that the vaginal cœliotomy does not give ready access to the abdominal end of the tube.

It is evident that the observations presented here have a very pronounced bearing upon the much-vexed question whether or not the uterus ought to be removed in every case in which the appendages have to be removed for inflammatory disease.

In conclusion, I have to express my thanks to my assistant at the Post-Graduate School, Dr. Gay K. Durbin, for aid given in the examination of these specimens.

100 State Street, Chicago.

DELAY IN THE FIRST STAGE OR PROTRACTED LABOR.*

By J. Lee Morrill, M.D., New York.

Protracted labor is a labor that is unduly prolonged from causes which occasion delay in the first stage.

The conditions which give rise to delay in the first stage are varied and diverse; but by tracing their mode of action upon the individual we arrive at a threefold distribution, viz.:

1. Any condition that enfeebles the uterine action and prevents dilatation though there be no impediment in the way of delivery.

*Read before the New York Obstetrical Society, November 9, 1897.

2. Where there is no deficiency of the expulsory action, but an arrest of cervical expansion from some obstacle.

3. Where there is neither uterine insufficiency nor hinderance in the canal through which the child has to be propelled but a disproportion in the fœtus itself.

It follows then that we must look to one of three factors for its solution: the expelling power, the channel and the body to be expelled.

The first requisite essential to all normal labors is strong and regular uterine contractions, with a distinct pause or interval of rest between the pains. If, therefore, from any cause the force of these contractions becomes enfeebled or their rhythm disturbed during the first stage protracted labor is likely to ensue.

The next requirement is that the parturient canal be free from all obstacles either acute, *i. e.*, œdema, spasm, etc., or chronic, *i. e.*, tumors, deformities and contractions either congenital or acquired.

The third, that the child shall present properly and be in proportion to the passages through which it has to pass.

If from error in any one of these factors, or from derangement in their correlations, the balance between them be disturbed labor may be interrupted or even come to a standstill until the harmony is again restored.

For practical purposes therefore we shall classify as follows: *A*, maternal causes; *B*, fœtal causes.

The maternal causes are both local and constitutional. Local maternal are: *a*, uterine; *b*, vaginal; *c*, bladder; *d*, rectal, and *e*, pelvic.

Constitutional maternal are: *a*, organic disease, acute or chronic; *b*, psychical; *c*, chronic poisoning, and *d*, want of physical development, muscular or osseous.

Treatment.

It is evident before one can deal successfully with a case of protracted labor, he must be fully acquainted with its nature and the cause producing it. It would be as irrational to administer quinine for uterine inertia due to a distended bladder as to rupture the membranes, when the delay is the result of uterine obliquity. Examination per vaginam will tell at once the state of the bladder and rectum, the direction of the cervix, its consistency and degree of dilatation, the condition of the membranes and the nature and position

of the presentation. Also the existence of deformities or growths in any part of the parturient canal. In many instances the finger of the trained accoucheur alone will be sufficient to make known to him all the facts in the case, but when a satisfactory exploration cannot thus be made, let him introduce the entire hand into the vagina or *uterus itself, if need be.* This in primiparæ will probably require anæsthesia, but in no other way can you obtain the information so important to the rational treatment of your patient.

Rigid Os.

One of the most frequent causes of delay in the primipara is rigidity of the cervix or os uteri.

It is a well-recognized fact that delay in first labors is not so much the result of disproportion as it is of rigidity of the soft parts or mal-position of the head. This is proven by the ease with which subsequent labors are conducted.

Assuming then that the other factors preserve their due relations, the fault must lie in the canal and be dependent either upon uterine insufficiency or a resistant os.

What are the conditions most likely to induce rigidity of the os?

Spastic contraction, thickening from œdema, abnormal direction and position of the cervix, an organically diseased cervix, cicatricial contractions, contraction at the brim, or presentation of some part of the child which does not descend easily and fairly upon the cervix, and agglutination of the os or cervix.

Spastic contraction is readily recognized by feeble uterine pains which are sharp and even agonizing. Upon local examination, we find an os which will admit one or two fingers. The tissues feel hot, dry and painful to the touch, and the edges of the os are like that of a knife-blade. The indication here is for very hot douches, repeated doses of chloral or the administration of chloroform. It is not likely that all of these measures will fail, but in the event of this happening, resort to the hand, Barnes's bags, and in urgent cases to deep incisions.

Œdematous thickening resulting from pressure may be relieved by elevating the head, liberating the imprisoned lip and pushing it out of reach. This failing, multiple punctures will relieve the œdema. Abnormal direction and position will be considered under pendulous abdomen.

Pendulous Abdomen.—A condition frequently met with in the

multipara favoring dystocia is pendulous abdomen, the result of weakening of the abdominal walls from either over-distension, separation of the recti muscles, or a contraction of the pelvis.

The uterine axis, instead of corresponding to the axis of the pelvic inlet, may be at right angles to it. When the flexion occurs at the vagino-cervical junction it is due to anteversion, and when at the utero-cervical junction to anteflexion. One has only to picture to himself either condition to understand how futile must be the uterine efforts to either dilate the os, or to expel the fœtus. In anteversion the cervix points to, or above, the promontory of the sacrum. The presenting part is felt through the thinned cervical wall, which may be mistaken for the membranes or the head. Absence of the os in the inferior strait, however, will readily clear up such mistakes. When flexion exists the os is more easily found, and is ordinarily undilated, even though it be softened and distensible. Introducing the fingers into the cervix, they meet with an obstruction at the point of flexion (os internum) which may be overcome by elevating the fundus and thus restoring the axis to its normal plane. Uterine deviation prolongs the first stage of labor primarily from inability of the pains to dilate the cervix, and secondarily by exhausting the uterus with its inefficient efforts.

The danger to the woman is twofold; either she lapses into powerless labor from uterine inertia, or the head forces itself through the anterior lip, or the entire cervix may be torn from its attachments. I have seen cases of pendulous abdomen in which women had been in hard labor for hours with the soft parts fully dilated and the child presenting normally, who were delivered immediately when this condition was recognized and corrected.

The treatment is simple. The patient should be placed in the recumbent position, the abdomen raised and supported with firm binder.

If the pains continue good, this will be all that is required. If, on the other hand, inertia has supervened and continues after a reasonable period of rest, deliver with forceps, or by version, according as the head is or is not engaged.

Organically Diseased Cervix.—Under this heading we include hypertrophies, cicatrices, chronic inflammations, myomata and carcinomata.

Hypertrophies and cicatrices, especially cicatrices from repeated lacerations, may be so firm as to refuse to yield to either hot vaginal irrigation or attempts at manual stretching. By incising the edges

of the os at various points with a probe pointed bistoury and then applying the hydrostatic dilator, the os may be opened enough to admit the application of forceps. If, in spite of incisions and the use of dilatators the rigidity continues, we may be obliged to perforate the head as a *dernier ressort.*

Women with chronic disease of the cervix rarely conceive. Should pregnancy occur, however, the delay is usually in the first stage, due either to a spastic os or to a cicatrix, the result of chronic inflammation. The treatment here is modified in accordance with the above mentioned causes.

Interstitial myomata, particularly those involving the cervix, may prove an insurmountable obstacle to complete dilatation, as in a case reported by me to this society in January, 1890. In this instance we barely succeeded in dilating enough for the uterus to cast off a four months' fœtus, but not enough for us to reach the placenta. The patient subsequently died of septicæmia. Hysterectomy or Cæsarean section affords the most ready means of relief from this difficulty, provided that the tumor cannot be pushed above the brim.

Carcinoma, if at all advanced, warrants Cæsarean section, and, if the operation is feasible immediate and total extirpation.

A contracted brim may, by preventing the descent of the fœtus, delay the os from dilating. If this condition be allowed to persist it can so exhaust the uterus as to induce inertia; or so soften the tissues that when the head is forced through, a laceration of the cervix takes place. The question of forceps, version, or the alternatives, symphysiotomy or abdominl section, arise, and must be decided in accordance with the degree of contraction and skill of the operator.

Atresia of the os and cervix occurring after conception is attributed either to occlusion by false membrane, concentric cicatricial contraction, or adhesive inflammation. It may be complete or partial. When complete there is an absence of the os, though inspection will ordinarily show where it had been.

Pressure with the finger at this point will often cause the adhesion to give way. When agglutination of the external os exists plunge a bistoury through it. Perform hysterotomy and dilate. This will relieve the cervical tension and prevent rupture. *Double uteri* may delay labor in the first stage through the uterine axis being deflected from the normal pelvic axis in consequence of unilateral development; or the imperfect muscular development may result in

uterine insufficiency; or the unimpregnated horn act as an obstruction.

Tumors.—There are few complications of labor that cause an accoucheur more anxiety and perplexity than tumors. Fortunately, fibroids located in or near the cervix act as an impediment to conception. When, however, conception has taken place the treatment will depend largely upon the size, character and location of the growth. As this paper deals only with the first stage we shall omit such as require removal either by vaginal or abdominal section, and confine ourselves to such as can be disposed of by simpler means. As a rule, where there is no encroachment upon the pelvic brim they give but little trouble. When, however, the parturient canal is obstructed we still have at our command several procedures. The tumor may be pushed above the brim; its bulk may be reduced by puncture when fluid and accessible from the vagina; or it may be removed with the wire loop or galvano cautery when it is pedunculated, and presents before the child.

Lastly, the fœtus may be turned, perforated or crushed.

Uteri bound down by adhesions, or pathologically changed by antepartum operative interference (as for example, ventro- or vagino-fixation) are capable, in a large number of cases of spontaneous delivery. But let the parallelism between the axis of the uterus and the pelvic brim be permanently disturbed from the above causes, and it may be necessary to do a Cæsarean section, or to sacrifice the life of the child for the safety of the mother.

Stenosis and rigidity high up in the vagina may be due to the age of the patient; or we may meet with atresia from cicatrices of traumatic origin, carcinomatous infiltration, or abscess-scars. Simple rigidity occurring in aged primiparæ is best treated by preserving the bag of waters, hot douches, Barnes's bags and such remedies as will retard labor until dilatation can take place. Where the contractions consist of dense cartilaginous tissues, that refuse to yield to the above measures free incisions supplemented by the hydrostatic dilator may succeed. Should other means fail and the mother's life become endangered craniotomy may become necessary.

Transverse bands, located high in the vagina, may obstruct the first stage of labor by preventing the external os from dilatating. They are readily removed by hooking the bridle under the finger and dividing it with the scissors.

The bladder, when distended with urine, becomes a serious ob-

stacle to labor, not only by displacing the uterine axis and thus preventing the presenting part from entering the brim, but by pressure upon the uterus interfering with the efficient contractions of that organ. Catheterization then often becomes very difficult from compression and distortion of the urethra, in which case it will be necessary to raise the presenting part in order to admit of passing the instrument.

A full rectum may offer considerable impediment to the first stage, especially if the accumulation has existed for a long time and has become impacted. The remedy consists in the removal of the scybalous masses, or, that failing, they should be broken up and removed with a scoop.

Deformed Pelves.

Pelves deformed, either by distortion or bony tumors must of necessity be a most potent cause of delay. But their varieties are so numerous and the methods of overcoming the dystocia due to them so various it would require a paper devoted to that cause alone to do justice to the subject.

Constitutional Causes.

We now come to a class of cases in which the uterine insufficiency is not due to disproportion but to weak muscular development. A simple want of *vis à tergo.* The pains occur at intervals but they lack the necessary power to overcome the cervix. We often see instances of this kind among women of the upper classes, who, from their mode of living, lack the vitality so indispensable to a normal labor. To differentiate between true and false pains is important, as the treatment differs as widely as the conditions themselves. The diagnosis of true pains is positive when dilatation of the os and bulging of the membranes during a pain can be established. The treatment of false pains resolves itself into the administration of chloral, opium, viburnum, viscum album or other uterine sedatives. On the other hand, weak pains due to vicious development or heredity demand the exhibition of such general stimulants as alcohol, coffee, tea, etc., or local stimulants such as quinine, or the introduction of a catheter into the uterus.

It might not be amiss to state right here, in terms which cannot be made too strong, that under no circumstances should ergot be

given, until everything is out of the uterus that should be out—be it fœtus, placenta, membrane or blood-clots.

Tough membranes are not infrequently a cause of dystocia, and are readily recognized. If, notwithstanding strong and regular pains, a normal presentation, a child in proportion to the passages, and the soft parts fully or easily dilated, the bag of waters continues intact, we have to deal with tough membranes. The diagnosis can be easily verified by introducing the aseptic hand into the cervix and between the pains palpating the membranes. Treatment—Puncture the membranes and thus complete the first stage. The following is a case in point: Mrs. D., multipara, age thirty-two years, seen in consultation with Dr. A., a neighboring practitioner. He told me that the patient had been in labor for twenty-four hours, during the most of which time he had remained with her. Her previous confinements were all so rapid that he concluded that the present delay must be due to a mal-presentation, and he requested my assistance. When I arrived she was still having quick, vigorous pains. As the cervix was out of reach of my fingers, I introduced my hand into the vagina and found a widely dilated os, a roomy pelvis, a normal head presenting and the membrane still unruptured. The breaking of the amniotic sac was followed by the immediate delivery of the child. The case is mentioned for the purpose of illustrating that had the true cause of delay been recognized by the attendant, both he and the patient might have been spared hours of fatigue and the woman much unnecessary suffering. Another cause of delay is a firm adhision of the membrane to the walls surrounding the os internum and so preventing the lower segment from stretching. The attendant has only to sweep the fingers within the cervix, between the membranes and the uterine walls, to break up the adhesions.

Persistence of decidua should be treated the same as tough membranes.

Absence of the bag of waters occasionally prolongs labor in the following way: The head being engaged in the true pelvis, fits the soft part so accurately that no liquor amnii is interposed between the head and the membranes, thus depriving them of their hydrostatic powers.

Another and similar condition is where the membranes have ruptured, but the head, acting as a ball-valve, prevents the escape of the waters during or between the pains. Treatment in both instances is the same. The head during an interval between the

pains should be pushed up a little and the liquor amnii allowed to descend.

Hydramnios by over-distending the uterus paralyzes its contractions and so prolongs the first stage. Having first assured ourselves that the os is dilatable and the presentation normal, we may rupture the membrane, remembering the advisability of puncturing high up, lest a too rapid escape of the fluid should occasion collapse, or should carry a knuckle of cord before it and so endanger the life of the child.

Premature escape of the liquor amnii causes the uterus to act at a disadvantage by preventing the bag of waters from acting as a wedge and substituting for it the presenting part which is less adapted to the work. In the majority of cases, unless the entire amount be lost it does little more than to delay the first stage; this time and patience will suffice to overcome. If from some untoward reason the amniotic fluid all drains away, we may be confronted with any or all the dangers due to dry labor. Our remedies here are hot vaginal irrigation, manual dilatation and Barnes's bags, followed, where there is an entire cessation of pains, by the internal administration of quinine, and other oxytocics.

Placenta previa may hinder the proper course of labor when the adhesion of the placenta to the os internum acts as a mechanical impediment to dilatation; and when the fœtus and its membranes are prevented from dilating the lower uterine zone because of the interposition of the placenta, especially if centrally planted. The treatment under these conditions is self-evident, not because of the prolonged first stage, but because placenta previa is a serious complication which demands immediate emptying of the uterus by any means that preserves the integrity of the maternal parts.

Malposition.—Protracted first stage is often dependent upon the faulty position of the child, the most frequent of which are the occipito-posterior, breech, and transverse. Determine the malposition by the introduction of the hand and rectify the same when possible.

Short cord, either relative or absolute, by preventing the fœtus from engaging properly may also retard labor. This rare and interesting condition is fraught with the gravest danger to both mother and child. On the part of the latter there is ever the possibility of spontaneous rupture of the cord from forcible attempts at delivery. On the part of the mother the danger to be anticipated is partial or complete uterine inversion. The diagnosis, while difficult, is

strongly presumptive when, other causes being excluded, the child is jerked from a lower to a higher plane during the labor; and if added to this we find, upon abdominal auscultation, a distinct umbilical souffle, the diagnosis is fairly clear. The treatment is as difficult as it is unsatisfactory. From a theoretical as well as a practical standpoint it would seem that the constant maintenance of a crouching posture by diminishing the length of the pelvic canal would make the cord relatively longer and thus effect the delivery. Should this not succeed apply forceps, at the same time artificial prolapse of the uterus with the object of preventing a possible inversion by lessening the tension upon the cord. Supposing the head to be above the brim do a version with the same artificial uterine prolapse. When the cord is extremely short the method advised, and successfully used, by the late Isaac E. Taylor might prove of material assistance, consisting of an elective version preceded by severing of the cord in utero and followed by immediate and rapid delivery.

Hydrocephalus and congenital encephalocele when small rarely give trouble in the first stage. Should, however, either condition be recognized and indications be present for delivery, puncture the sac, and if required turn.

Premature ossification of the fœtal cranium is a condition so rare as merely to require mention as a possible cause.

Monsters and other conditions under this classification seldom interfere with the dilating stage. When they do become a factor in delay, the cause will, as a rule, be found to be due to either malposition, over-distension, or absence of liquor amnii.

In conclusion, doubtless some of the remedies or procedures suggested in this paper will not meet the approval of a part of my hearers. I ask them to bear in mind, however, that while they, by special schooling, are fitted for the more radical operations, that there are many skilled obstetricians who lack that training, and who would oftentimes fail to get the consent of the patients, even if competent to perform them.

67 East Seventy-ninth Street.

CASE OF HERNIA THROUGH A RUPTURE OF THE UTERUS, NECESSITATING RESECTION OF THIRTEEN FEET OF INTESTINE.*

By H. S. Crossen, M.D.,

Superintendent and Surgeon in Charge of St. Louis Female Hospital; Member of the St. Louis Obstetrical and Gynæcological Society; Member of the St. Louis Medical Society; Member of the City Hospital Medical Society.

The patient, Mrs. K., German, aged twenty-six, was brought to the hospital on a stretcher, about 11 P. M., August 1. A large part of the small intestine was lying between the thighs wrapped in a cloth. Her temperature was 101° F. and pulse 126. I obtained the following history: Patient menstruated last on May 20. Had some pain in the abdomen frequently since May but was at no time sick in bed. The afternoon of July 31 she had pain in lower abdomen, not severe, but enough to annoy her. Later in the day, about 6 or 7 P. M., while the patient was attempting to get into a wagon the wagon moved forward and the patient fell backward to the ground, and her baby, which was twenty months old, fell on her, striking her in the abdomen. The fall did not seem to increase the pain particularly, and she gave but little thought to it. Without suffering, she continued on her way home from the family picnic she had been attending. Toward midnight the pains became very severe and continued so the remainder of the night. Patient stated that there was no bloody discharge then. Early the next morning her husband went for a midwife, as an abortion was feared. When the midwife arrived, about 6 A. M., the fœtus and membranes had been expelled and the patient felt easier. Later, however, the pains returned, and toward noon the midwife made an examination to ascertain the cause of the severe, persistent pain. She found in the vagina a round, soft mass of the nature of which she was in doubt. A physician was then sent for. He arrived about 1:30 P. M., made an examination and found the soft mass in the vagina to be intestine. In endeavoring to ascertain just what the mass was he brought it down so that he could see it. Just as he succeeded in bringing it

*Read before the St. Louis Obstetrical and Gynæcological Society, Nov. 18, 1897.

into view there was a gush of intestine from above and several feet of it came down between the thighs. After considerable delay the patient was sent to the hospital, where she arrived about twelve hours after the intestine had been discovered in the vagina. She was immediately prepared for examination and operation.

On examination, I found that the intestine protruded from the uterus and that the portion of intestine outside the body was stripped of mesentery and consequently was without blood supply. I then opened the abdomen. The peritonæal cavity contained blood, both free and clotted. The tear in the uterus was low in the anterior wall. Of the mesentery which had been torn from the intestine a portion was in the peritonæal cavity and another portion was wedged firmly into the uterine tear. The free edge of the mesentery was ragged and black from hæmorrhage. I then removed all that part of the intestine from which the mesentery had been torn, and which was, therefore, practically dead, and made an end-to-end anastomosis. The rent in the uterus, which was transverse and appeared to be about one and a half inches long, was sutured in the usual manner. The long stretch of mesentery was ligated with silk ligatures, and the bruised, ragged portion cut off. The abdominal cavity was then washed out, a gauze drain passed to the anterior surface of the uterus and a glass drain into the posterior cul de sac and the abdominal incision closed. The portion of small intestine which it was found necessary to remove measured, when fresh, fourteen feet. After being in alcohol for several days it measured thirteen feet and five inches. The patient was very weak after the operation, and continued so the remainder of the night. The next day, however, she became much stronger, and after that, though there was considerable fever all the time, the progress of the case was surprisingly favorable for three days—several bowel movements being obtained and the patient having no pain. Later well-marked symptoms of peritonitis appeared. But the patient survived until the sixth day following the injury.

Post-mortem examination revealed general peritonitis; sloughing of part of the mesentery beyond the ligatures; intestinal wall, at site of anastomosis, intact; infection of the endometrium and of the uterine wound. There was no leakage from the sutured intestine. It had been closed with one row of interrupted sutures and two rows of continuous Lembert sutures. Water was run through it without leakage. I was somewhat disconcerted to find sloughing of the stump of the mesentery. It was due, of course, to the cutting off

of the blood supply of the stump by the ligature. But I am at a loss to know how to avoid it in such a case. In an ordinary case of resection the separate vessels can be caught and tied, but to attempt to catch separately each of the vessels along an eight or ten-foot line of spurting arteries would be folly. It would take far more time than could be spared where the patient is so weak and there is so much other work to be done. Why should the stump in this case slough when the stump following ovariotomy does not slough, ordinarily. The constriction of the vessels is certainly as complete

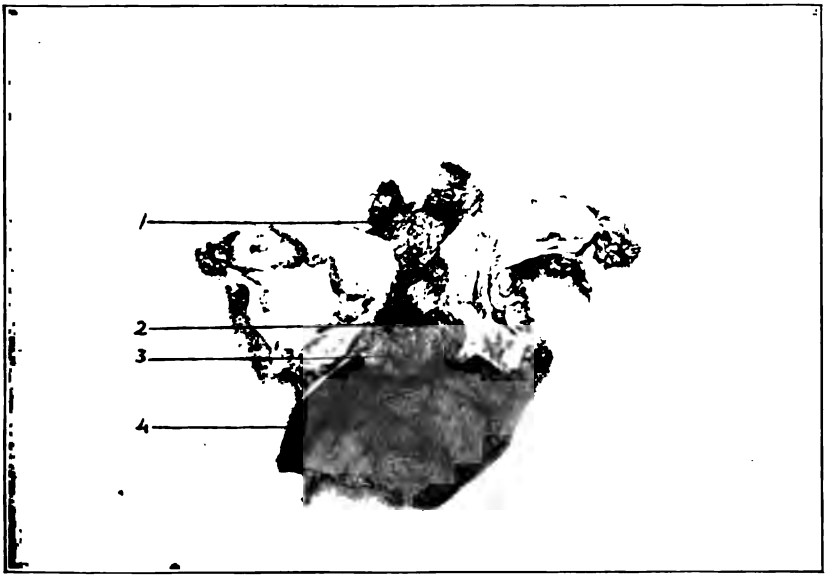


FIG. I. 1. Uterus. 2. Rupture reopened. 3. Cervix Uteri. 4. Vagina.

in the one as in the other. In this case I left only enough tissue beyond the ligatures to keep the latter from slipping. Perhaps there is more sloughing of the ends of ovariotomy stumps than is generally supposed, and I have wondered if many of the disturbances attributed to infection from ligatures were not due to sloughing beyond the ligature instead of infection from it.

There are two points of special interest in this case.

1. Rupture of the uterus, without instrumentation, so early in pregnancy.

2. Resection of such a large part of the intestine.

The fact that the patient was only two and a half months pregnant led me to suspect that an instrumental attempt at abortion had been made. The tear in the uterus being in front and about at the internal os and transverse gave additional support to the supposition that a dilator had been forced through the uterine wall and then opened. But the patient denied repeatedly that there had been any kind of an attempt at abortion. Her husband also made the same positive denial. The physician who accompanied the patient

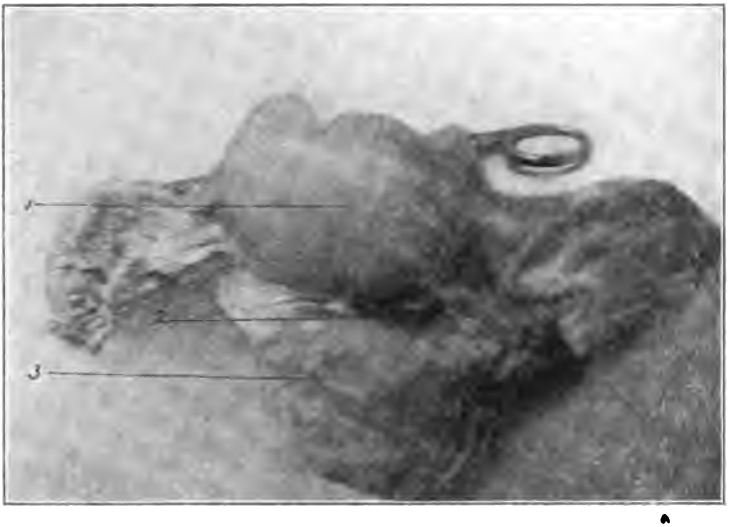


FIG. II. 1. Fundus of Uterus. 2. Site of Rupture. 3. Fundus of Bladder.

to the hospital stated that he had known the family for some time, and from his knowledge of their character he did not believe they would entertain the thought of an abortion. And from the patient's conduct in the hospital I was inclined to the same opinion. She was a model patient and apparently a sensible and conscientious woman. In the absence of instrumentation, the rupture would have to be attributed to the fall from the wagon or to disease of the uterus or to both. I could get nothing from the patient's previous history that would indicate serious uterine disease. Her health, as a rule, had been good. She had had three children—one six years ago, one four years ago, and one twenty months ago. Had no trouble following labors; no miscarriages; no "womb trouble." During the last menstruation, which begun May 20, there was a decided flow

for five days, and then a very slight flow for five days more. She often menstruated as long as a week, and she noticed nothing unusual about this menstruation. The patient had had chills, supposed to be malarial, frequently from the time her last child was born until the month of May, at which time she became pregnant again. Had no chills after that, but was annoyed considerably by

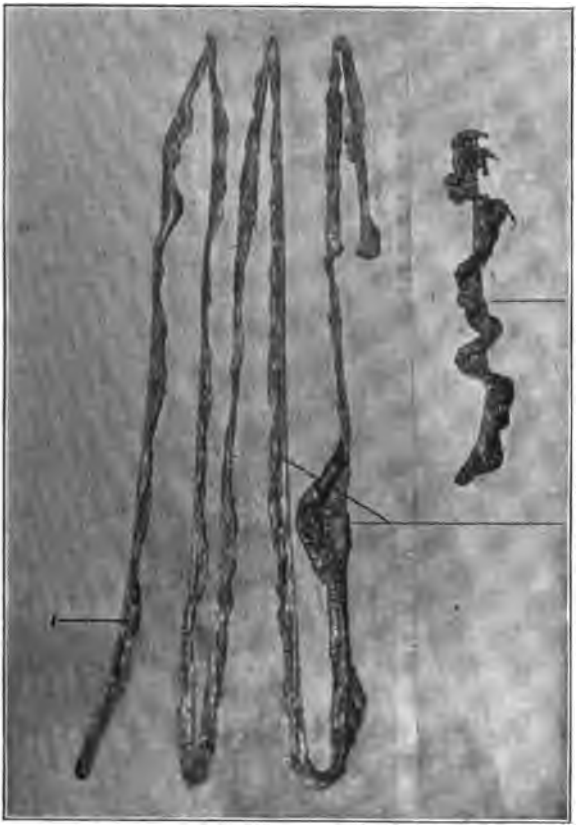


FIG. III. 1. Portion of Intestine removed. 2. One of Pieces of Mesentery.

pain in the lower abdomen. Had no such pain during previous pregnancies. The pain was not severe. Patient was not confined to bed any of the time, and was able to do all her housework except washing.

The uterus was submitted to Dr. Carl Fisch for microscopical examination and his report is as follows:

"The microscopic examination of a piece of tissue excised at the site of rupture and extending through the whole thickness of the uterine wall gave the following results: There was directly following the line of rupture a zone of fatty degeneration and granular disintegration, which, centrifugally, was bordered by a zone of round-cell infiltration. The area beyond and around this inflammatory deposit was distinguished by a very marked sclerosis of the walls of the larger and smaller vessels, in many places reaching perfect obliteration. The character of this arterio-sclerosis was de-

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FIG. IV. 1. Line of Union.

cidedly syphilitic, though in the absence of other histologic changes peculiar to this disease I would not like to be positive about this point. However, the vascular changes appear to have been such as to seriously interfere with the vitality of the tissues around the point of rupture, and, in my opinion, this arterio-sclerosis was of such a degree as to be able to produce in an uterus in the third month of pregnancy a spontaneous abortion and rupture."

The other especially interesting feature of the case is the amount of small intestine removed. This measured more than thirteen feet and that without stretching. The mesentery being torn from the intestine allowed the latter to appear longer than it otherwise would have appeared. But the amount of small intestine remaining was measured at the post-mortem examination and was found to be about eleven feet. So you see that at least half of the small intestine had been removed.

One thing noticeable about the part remaining is that at the site of the resection no idea can be gained of the amount removed. Looking at this specimen, one would hardly guess that more than a few inches of intestine had been taken out. The cut ends came together nicely and were sutured without difficulty.

MENTAL DISTURBANCES IN THE FEMALE PRODUCED AND CURED BY GYNÆCOLOGICAL OPERATIONS.*

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It is not my object in this brief paper to discuss the production of mental dsturbances in the female by disease of her sexual organs, nor the relief of those disturbances by the cure of the pelvic disorder by *any* and *all* means which may seem appropriate, nor do I intend to refer to the so-called reflex neuroses depending or supposed to depend on pelvic desease in the female and cured by the relief of the latter. This would carry me entirely too far. Besides, these phases of the relations between the mind and the nervous system of the female and her genital organs have been touched upon by a number of authors during recent years, and by myself in a paper entitled "Clinical Observations on Reflex Neuroses in the Female," read before the Section in Neurology of the Academy of Medicine on March 12, 1886, and published in the *Journal of Nervous and Mental Disease*, for March, 1886.

My purpose now is merely to discuss, firstly, the *production* of

* Read before the Woman's Hospital Society, Nov. 16, 1897.

mental disturbance of more or less severe degree in the female by an operation on her genital organs, and secondly, the *cure* of a mental disturbance by a gynæcological operation.

This, it will be admitted, is a rather limited field for discussion, and probably for that reason it has been but little exploited.

1. *Production of Mental Disturbance by a Gynæcological Operation.*

I am aware that I shall be criticised for touching on so problematical an occurrence. At least, I expect to find it doubted whether such a result is ever produced by or directly follows a surgical procedure on the female generative organs; and still I can relate a number of instances where I have seen temporary mental aberration follow an abdominal section, and several where the aberration was permanent. I have even seen temporary mental derangement follow minor operations, such as trachelorrhaphy and perinorrhaphy. But I must say, in justice to my theme, that I do not believe that the operation itself was to blame for this result, but rather a preceding general anæmia or a predisposition to insanity, which simply culminated in an acute cerebral anæmia or cerebral functional derangement, as a result of the shock or loss of blood accompanying the operation. Such patients had probably been worrying about their condition for some time, or previous suffering had rendered them so anæmic and so neurasthenic that the anæsthesia and often trifling physical shock of the operation for the time upset their mental equilibrium.

I have thus seen a lady insane for a month after a severe confinement, and a secondary operation for complete laceration of the perinæum. And I remember a case in 1890 of difficult ovariotomy with twisted pedicle in a lady from Richmond, Va., who began to have peculiar hallucinations of different kinds within two weeks after the operation, which increased instead of diminishing, and who was transferred to Blockley Hospital for the Insane, at Philadelphia, by her friends, where she still remained several years later.

That mental disturbances may be produced in highly-strung, emotional and hysterical women by the disappointment caused by a failure of the operation on their genital organs—be it an oöphorectomy, a hysterectomy, a trachelorrhaphy, or some other minor operation—to effect the expected and promised cure of the symptoms for which it was performed, will probably not be centradicted by those operators who, with the best intentions, have performed many gynæ-

cological operations of doubtful necessity. I can hardly expect these gentlemen, however, to testify against themselves.

In a certain number of cases I am sure that the temporary mental disturbance following the operation within the first week or two (muttering delirium, hallucinations, melancholia) have been due to iodoform toxemia, since the symptoms gradually subsided when the iodoform dressings were discontinued. Undoubtedly, predisposition to hysteria and insanity plays a highly important rôle in the production of mental disturbances under physical and mental excitement of any kind, and it is these patients chiefly who are likely to furnish examples of the variety coming under this category. Therefore, an operation on any part of the body may in such individuals produce such a result.

2. *Cure of Mental Disturbances in the Female by a Gynæcological Operation.*

This part of my subject will undoubtedly appeal far more readily to my audience than the first proposition, since it not only seems, but is more plausible to suppose that an operation on the genital organs of an insane female will cure her insanity than that such an operation will produce that result in a previously sane woman. And, besides, the practical side of the question attracts us. Who would be tempted to operate on a woman's pelvic organs if he had a reasonable expectation that insanity would follow the operation? Probably no one! On the other hand, the majority of gynæcologists would probably not hesitate a moment to remove an insane woman's ovaries, or even her uterus (!), or sew her lacerated cervix or perinæum, if there seemed a *fair* prospect that the operation would relieve her mental symptoms. The question to decide is *when* is there a *fair* prospect of this result? I fear that the opportunity to operate, the love of the knife, the importunities of patients and friends (not to mention sordid motives, which I should regret to ascribe to any reputable member of the profession) has determined many such an operation, which was proved by the unfavorable results to have been unjustified. A case in point is the following: Some years ago, at the urgent solicitation of the patient's brother, a physician, who described the pelvic pains and mental condition of his sister (a married woman) as unendurable, I consented to remove her ovaries, although I could not detect anything abnormal in them. I gave a doubtful prognosis as regards the mental

symptoms and my view was confirmed by the continuance of those symptoms. She remained as neurotic, as unreasonable, as hysterical as before. Finally, as I refused further operation, her uterus was removed by another gynæcological surgeon! *Cuni bono?* She remained the same, as might have been expected. It is very tempting, I candidly admit, when a patient has melancholia, insomnia, hystero-epilepsy or nymphomania, for which no other cause can be discovered, to ascribe the *fons et origo mali* to a lacerated cervix or perinæum, to hypertrophied nymphæ or clitoris, to a fibrous uterus or to the menstrual function, and to recommend an operation in accordance. I confess that I have seen some mysterious and remarkable cases which were benefited by an operation performed by me under these indications; such as cataleptiform trance during coition or pressure on the cicatrix of a lacerated cervix by the examining finger, cured by excision of the cicatrix and repair of the tear; universal chorea, cured by trachelorrhaphy; neurasthenia likewise; hemiorania of fifteen years' standing likewise, etc. (See loc. cit., 1886). But I think we should study cases of this kind carefully and draw the line pretty closely when advising operations on the genital organs of a female for apparently entirely unrelated and independent mental disturbances.

I, for my part, cannot see how either a lacerated cervix or a torn perinæum or a uterine fibroid can produce, directly or indirectly, a mental aberration. (I exclude such cases of lacerated perinæum where the gaping vaginal orifice causes physical infelicity in the husband and a corresponding mental disturbance in the wife. There, of course, it is our solemn duty to at once repair the perinæum and restore happiness to a disunited family). I do not pretend to explain the mysterious instances of cure to which I have referred from my own experience. I admit that I would certainly consider it my duty to advise the closure of a deeply lacerated cervix or perinæum if that were the *only* lesion I could detect in a woman suffering from some mental disturbance, *especially if she were aware of the existence of the lesion*, and after all other means had been tried ineffectually to restore her mental condition, I should then expect the operation to act as a moral or a mental remedy, almost or entirely irrespective of its local necessity. But I should be careful not to promise a success to the family; the patient, of course, should be inpressed with the certainty of a cure.

But I do not think I would advise or practice the removal of the ovaries or uterus, any more than the repair of a lacerated cervix or

perinæum, or the removal of the clitoris or nymphæ for an undoubted insanity of more or less permanent type. Whatever improvement would ensue would most probably be but temporary; and we could not well go on, with proper regard for conscience and propriety, from a clitoridectomy to a perinæorrhaphy, then to a trachelorrhapy, then to an oöphorectomy, and finally to a hysterectomy, with transient mental improvement after each operation; until finally there was no pelvic organ left to remove! The results of oöphorectomy in insane women have not been favorable. The insanity had nothing to do with the ovaries or their functions. What benefit could there be expected from their removal? If such a connection can be distinctly determined then the case is different, and the appendages should be removed.

Hence I have several (5) times performed salpingo-oöphorectomy for hystero-epilepsy (the ovaries being macroscopically healthy, but microscopically diseased) with exceedingly beneficial results. But this is a different thing from *true* insanity. Of course, I have but glanced at the various phases of my subject, without any attempt at detail or completeness. I hope the discussion will bring out such points as I have failed to touch upon.

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EDITORIAL.

MEDICAL "EXPERT" TESTIMONY IN LAW COURTS.

Hopeful as we are that the day is dawning when the profession will arise from its long and lethargic indifference to its own interests, when it will take common counsel for the restoration of its sometime influence and the preservation of its honor, we feel that no more needed nor timely word may be spoken than that which forms the subject of this editorial.

The custom to employ "expert" medical testimony in civil and in criminal cases arose, like many another scandalous abuse, in honest intention and just resolve. It was meant to aid the course of justice but, from the moment that he began to be employed and to be paid by either party to a suit, the medical expert laid himself open to the gravest suspicion of bribery. So well recognized is his position to-day and at so low an appreciation is his honesty held by the public at large that, no matter how deservedly prominent he may be among his brethren, his word, even under oath, is not believed in a court of justice. He is bullied, harried and laughed at by the opposing counsel, on the avowed principle that his testimony has been bought and that he has contracted to pervert the truth, if not ac-

tually to belie it, for the side which has employed him. To the general public—our patients!—a medical expert testifying for one side is an object of amusement when the report of his insulting cross-examination appears in the press; to lawyers, who are hardened by habitual contact with criminals, he is an object of undisguised suspicion and contempt.

It is not our purpose to judge, nor are we capable of so doing, whether such accusation against the honesty of any given expert in any given case is just. We merely state, in unaffected terms, a great scandal which reflects upon the good name of the whole profession. What an edifying spectacle when experts employed on opposite sides of the same case meet in court (with their respective fees contracted for) and from the witness chair flatly contradict each other upon a matter of scientific fact; while afterwards they guardedly fence with the opposing counsel in cross-examination, lest they might be led into making admissions injurious to the side from which they must collect their fees!

All medical experts thus employed may have been honest and may never even have obviated a little truth nor avoided a bit of testimony which, though true, would have been prejudicial from a partisan standpoint. We sincerely hope this is true and we know nothing to the contrary. But we do know, as the whole profession knows, that it is a disgrace that Science, whose watchword is Truth, should be put up at auction as a partisan.

It is surely time that the profession take into consideration this practice and stop it both by public opinion and by legislation.

When it becomes a fact that no reputable medical man can be bought at any price to serve one side in any case at law—when his scientific light shall be cast about the feet of Justice only—then will the medical brotherhood have redeemed its honor from suspicion and have wiped out the aspersions of venality now breathed upon it by every man who will.

Let it become the rule, accepted by the profession and by the law, that a medical man may appear as an expert only when so chosen and agreed upon by counsel on both sides of a case or when appointed, also by mutual consent, by the presiding judge or referee; then and only then will he be, as he should always be, "like Cæsar's wife, above suspicion."

LET CHARITY BEGIN AT HOME.

An astonishing and significant event occurred a few weeks ago at the Mayor's Office in this city. At a public meeting of the municipal Board whose duty it is to apportion a certain amount of the public funds among public and quasi-public charitable institutions, the objections to such distribution, accompanied by the most strenuous protests, came from the accredited representatives of a very large majority of the medical profession in this city. One prominent specialist, notorious from the beginning of this struggle for his uncompromising hostility toward every effort to stop the abuse of medical charity by public institutions and thus relieve the physical distress from which so many of his poorer medical brethren are suffering, was not ashamed to stand forth as the champion of lay corporations in their struggle to perpetuate a great wrong.

As reputable physicians stood forth, vilified and gave each other the lie—one side working for and in the name of the profession who had chosen them their mouth-piece, the other side shamelessly betraying the rights of their brethren—the thought would obtrude itself: How senseless is the spirit of weakness and disunion which now prevails among us and which makes it possible that one of ourselves may openly and for the most interested and selfish reasons defy the expressed will of the majority and still remain a member of our societies and a physician "in good standing." How different the case would be were we a united body of men, above the influence of petty personal jealousies, which merely by the force of its united public opinion could effectually crush out the machinations of traitors to our order.

One or two very serious questions were suggested in the course of the heated discussion before the Board. It may not be inopportune, among other things, that the disinterested portion of our profession consider in what and to how great a degree the successful and very popular New York Post-Graduate School and the New York Polyclinic differ, in their rivalry to secure patients for their respective hospitals, from those acknowledged incubuses upon medical charity, the New York Hospital, the Vanderbilt Clinic and the Sloan Maternity. The question is indeed a pertinent one, how far is the temptation to fill their beds with pay patients, for the support of the former institutions, counteracted by their sense of the injustice of depriving outside physicians of patients who are capable

of paying moderate fees for medical attendance and operations. Are these schools always careful never to admit to free medical service patients who are not too poor to pay for them or are they also in the organized scheme of corporations to impoverish the profession with a pretense of charity, whose object is to re-emburse the stockholders? For the honor of the profession we hope that the suspicions in this regard which were openly suggested at this public meeting were unjust. It were better that we had no post-graduate hospitals and, for that matter, no post-graduate schools than that a privileged class of surgeons should prey upon their needy brethren and, for their own aggrandizement, deprive them of their only means of livelihood.

This practice must stop, wherever it exists and by whomever—medical men or laymen—it is fostered. Patients who can pay for medical services must be made to pay and only the really poor may be recipients of our bounty. This will, without question, be accomplished; but that the result shall be permanent it is necessary that the profession become individually less selfish and *co-operate* for the furtherance of our common interests. Let our Charity begin at home that we may extend it more widely where it is deserved!

CORRESPONDENCE.

MEDICAL CONTROL OF MEDICAL INTERESTS.

PATERSON, N. J., December 14, 1897.

To the Editor of the American Gynæcological and Obstetrical Journal:

SIR: I desire to express my great appreciation of the editorials which have been appearing recently in the JOURNAL. It is a pleasure and a satisfaction to know there are some men controlling our journalism who have the courage of their convictions and who are opposing those forces which are slowly but surely wrecking the profession of medicine. We have been holding on to a code of ethics (which I hope every one will continue to cling to and honor), thinking it to be the panacea for all our woes and, at the same time, allowing an undercurrent of forces, usually considered outside of the profession, to inundate what little of stability we have left.

The ragged edges of our profession are many. These have to do with ourselves and with those with whom we have to deal from necessity. We demand honor from one another and yet blindly allow those auxiliaries to the profession to bunco and undermine us. Rationally organized co-operation is the first step and the only remedy. Under this co-operation let us control medical education, medical publishing, the medical leterature, especially of therapeutic interest, wholesale advertising and a host of ills which affect our professional well-being.

In conclusion, permit me to say that I will look with interest for more articles in the JOURNAL along this line.

R. M. CURTS, M.D.

NORMAL LABOR SUBSEQUENT TO VENTROFIXATION.

BROOKLYN, November 20, 1897.

To the Editor of the American Gynæcological and Obstetrical Journal.

SIR: I recently confined a ventral fixation case of Dr. Palmer Dudley. I use the word recently in a comparative sense, for it was really July before last—July 21, 1896. I have been derelict in not reporting it before.

I had seen the woman a month or so before her expected date, which I predicted to be August 10 (Naegele's rule). I was very careful about getting the date as accurately as possible, being curious to learn whether labor would be influenced in any way by the changed conditions. She was confined July 21, yet the child showed no signs of prematurity, so I believe it was practically a full term case; nor was the discrepancy unusual, predictions being so liable to error. Labor was perfectly normal, and in no way was the puerperium distinguished by any unusual event. The child was perfectly healthy at birth (weight, 8 pounds) but has since become marasmic. At the present time, and here I might say that it is just as well that I have waited so long before reporting the case, the mother's pelvic organs are as they should be—no prolapsus in any degree, etc.

According to the patient's statement, the ventral fixation was done by Dr. Palmer Dudley about three years before her confinement (some time in 1893). She had had two children before the operation.

My experience being limited and my gynæcological knowledge meager, I can say nothing personally in the way of deduction, etc., concerning this case, except that I was agreeably surprised at its outcome; I, as well as the woman herself, having been fearful of the result of labor. Never having had such a case, and being unfamiliar with the literature of the subject, which latter I might indeed have availed myself of yet did not because of other distractions, I concluded to do as a certain eminent practitioner of my acquaintance does in his obstetric practice—finding a head, he thanks God; not finding one, he trusts in God.

In gauging results, it would seem to me that the operator's technique is a controlling factor. Perhaps bad operators are related as much to bad results in the matter of ventral fixations as they are in other departments of surgical art. I say this, not knowing the present opinion as to the general availability of the operation. I am not a gynæcologist but would respectfully opine that in the present instance, at least, it is fair to say that the good result (normal labor and no prolapsus therefrom) argues a good operator.

I apologize for this undetailed report, if report it can be called, and trust that it may not prove entirely useless to those collecting data bearing on this subject.

ARTHUR C. JACOBSON.

118 Johnson Street.

REVIEWS.

A Text-Book of the Diseases of Women. By HENRY J. GARRIGUES, A.M., M.D., Prof. of Gynæcology and Obstetrics in the New York School of Clinical Medicine; Gynæcologist to St. Mark's Hospital, New York; Gynæcologist to the German Dispensary, New York; Consulting Obstetric Surgeon to the New York Maternity Hospital; Fellow of the American Gynæcological Society, New York Academy of Medicine, etc., etc. Second Edition. W. A. Saunders, Philadelphia, Publisher.

After the cordial reception, both by the medical press and the profession, accorded the first edition of this valuable work, which appeared a year or so ago, further commendation upon this, the second edition, seems hardly necessary. The author's aim has been pre-eminently to write a practical book and in this endeavor he has succeeded most admirably. Theoretical discussions have been omitted and pathology has been treated but briefly. The scope and size of the work would not of course permit of the description of all methods of treating every disease; still the author has given, in a clear and concise manner, the best modes of treatment, and in many instances has gone into minute details of treatment and operative procedure not usually found in text-books, but which are particularly valuable to practitioners removed from medical centers and daily intercourse with brother practitioners. The book aims to help the reader to first make a diagnosis and then places before him the practical methods of successfully treating the different diseases, always suggesting the simpler and more conservative measures before the more complicated and dangerous ones.

The book is divided primarily into two parts, a General Division and a Special Division. Under the general division are subdivisions, comprising chapters on the Development of the Female Genitals, Anatomy, Physiology and Ætiology in general, which are well written and profusely illustrated. These are followed by chapters on Examination in General and Treatment in General, which are most valuable, giving minute details regarding examinations, means of diagnosis, external and internal treatment, antisepsis, asepsis, instruments, anæsthesia, after-treatment and electric treatment, which

will prove not only useful as a ready reference but also as an actual working guide. This division closes with chapters on Abnormal Menstruation and Metrorrhagia, and a special chapter on Leucorrhœa, all of which are replete with practical suggestions and useful prescriptions.

The special division first takes up the diseases of the vulva, perinæum and vagina, all of which are well written, containing concise yet lucid descriptions with fairly good illustrations of the best of the numerous operations for the repair of the lacerations of the perinæum and vaginal walls, together with appropriate medical treatment for the relief of the non-operable conditions. Then follow chapters on Diseases of the Uterus, Fallopian Tubes, Ovaries and Pelvis (Peri-uterine inflammation) which are probably the best in the book. The whole surgical treatment of uterine fibroids and carcinoma has been rewritten to keep pace with the rapid advances constantly being made in the treatment of these conditions. Vaginal section has been placed on equal terms with abdominal section.

The volume concludes with a short appendix containing chapters on Sterility and a short one on Intestinal Surgery, with descriptions of the various methods of intestinal anastomosis—Abbe's, Maunsell's, Murphy button and end-to-end method.

Not the least praiseworthy feature of this book is the prominence given the modes of treatment as they are practiced in this country, thus making it more useful for American students and practitioners than those works written by or translated from foreign authors. The size is convenient, typographical work good and abundantly illustrated. A very complete index greatly facilitates reference. Altogether it is a book that will well repay a careful study and will prove a valuable contribution to the literature of the subject.

(G. H. M.)

An Epitome of the History of Medicine. By ROSWELL PARK, A.M., M.D., Professor of Surgery in the Medical Department of the University of Buffalo. The F. A. Davis Co., Philadelphia, Publishers.

For the presentation of this subject in so attractive and interesting a form the medical profession owes Dr. Park a debt of gratitude.

That the history of medicine has been sadly neglected in our medical schools none will deny. The usefulness of this study should be apparent when one thinks of the gross errors that have

been repeated over and over again through lack of knowledge of what had gone before.

Of the students who read of the lives and deeds of the great masters of our profession at least some will be carried by their zeal to look beyond the money-making part of the practice of medicine and be inspired with the desire to emulate those who have made the history of our art. All will find the reading more interesting than most novels and with much more useful information.

The student of medical history, among other attainments, when asked why the profession does not countenance secret and proprietary remedies and procedures, may quote the words of the immortal Paré: "For my part, I have dispensed liberally to everybody the gifts that God has conferred upon me and I am none the worse for it; just as the light of a candle will not diminish no matter how many may come to light their torches by it."

In this pre-eminently practical age it is refreshing to read a medical book that is not addressed to the alleged "busy practitioner" but to all who are interested in medical science.

The book deserves, and we believe will enjoy, a wide circulation. It is attractive in form and abounds in interesting and instructive illustrations. (M.)

TRANSACTIONS OF THE WOMAN'S HOSPITAL SOCIETY.

Stated Meeting, November 16, 1897.

The *President*, PAUL F. MUNDÉ, M.D., in the Chair.

Ectopic Gestation.

Dr. LEROY BROUN: The first specimen I bring forward simply on account of its beauty. It is a case of ectopic gestation of about two months and rather emphasizes the importance of the careful examination of patients coming under our care for supposed miscarriage and which I think we cannot lay too much stress upon. The patient was in Dr. Hanks' service in the hospital, and it was during his absence and the absence of his assistant surgeon that I had the care of his service. She was sent in for supposed miscarriage and had stopped flowing. I examined her and found a slight mass over the right side. The mass continued to grow without pain. She did not have a single symptom, there was no pain, she was perfectly well, said she saw no reason why she should be kept in bed. She was kept under observation for some time in bed before operation. At the time of the operation the tube had not ruptured. It was easily ligatured and removed. On incising the tube a little fœtus protruded. The beauty of the specimen is that the cord is intact, attached to the fœtus on the one side and the tube on the other. If rupture had happened, the chances are that the woman might have bled to death on account of the tumor being free of adhesions, and it rather impresses upon me the lesson that in all of these cases of supposed miscarriage, it is right and justifiable that we should examine the patients at intervals. Of course, we do not expect to find tubal pregnancy in every case, but occasionally we do. I had a similar case that was rather parallel to it, except that it was a ruptured tube. It was in the hospital; she came there for supposed miscarriage. She was examined by Dr. Cleveland and myself, and nothing was found. She was curetted, put back to bed; she had no pain, and before she was allowed to leave the hospital, I examined her—a matter of routine—and, to my astonishment, the entire pelvis was filled up with a boggy exudate. She had no temperature. The abdomen was opened a few days afterward; the pelvis was found

filled with blood. A possible ruptured tubal pregnancy had taken place under our eyes. She had not been examined from the time she was curetted until she asked to go out of the hospital. I curetted her but I do not know whether I examined her at the time or not. It illustrates that we should make these examinations.

If any of you examine the specimen you can see the five fingers intact, and the five toes. The cord is attached on the one side to the fœtus and the other to the embryonic placenta, which lies in the tube.

Mistaken Diagnosis: Supposed Ectopic Gestation; Abortion; General Peritonitis at Time of Operation.

The next specimen I wish to report is in connection with the other, and I bring the two together. I am sorry Dr. Bissell is not here because it was through him that I saw the case. It was for him I operated. Dr. Bissell asked me to see the patient for him during the summer. He had had her under his charge in the clinic. He was positive the uterus was forward. He could feel neither the ovary nor the tube on either side. Some month or two afterward he was sent for by this patient. She was in bed, the abdomen distended, had a great deal of pain at times, and the excretion of the kidneys had ceased; there was a very small amount of urine, temperature 102.5°, evidently a peritonitis. There were all the symptoms of pregnancy, she having missed a period for about three weeks. On examination, the uterus was pushed backward, and there was a large mass over the right side. He saw her four or five days in succession and felt confident it was a case of tubal pregnancy. He asked me to see it. I examined her and thought the same. I took her into the hospital and he requested me to operate the next morning, since he was going away in the afternoon. I operated and found, in addition to general peritonitis, an ovarian cyst on the right side, and not only that but a white exudate around the ovarian cyst. The appendix, being diseased, was taken out, and the uterus curetted. On curetting I recognized that the case had been one of normal pregnancy and what was removed from the uterus was the remains of an abortion. Four days afterward she died. An examination of the uterus by Dr. Freeborn showed that there were some tissues indicating pregnancy. His report was that the tissues were too neurotic to make a positive diagnosis. I report the case in connection with the other because I made a mistake

in operating so soon, instead of watching her. When the abdomen was opened there was general peritonitis; there was this exudate of which I spoke around the ovarian cyst; the appendix was not perforated; the intestines were congested. She had been running a temperature of 101.5° to 102.5°. The error I made was in operating at once. I believe she might have died from the general peritonitis. The result of the operation had nothing to do with the death; it was simply an extension of what she had. She might have gotten over it by waiting and treating symptoms.

Double Pyosalpinx; Draining through Uterus at Time of Operation.

The third case I wish to bring up is a rather unique example, finding, at the time of operating, a pus tube emptying through the uterus. It is held by some that such a thing as a pus tube emptying into the uterus is impossible, but Dr. Cleveland has always held that such can be the case. I have never seen the pus exuding from the uterus, yet I have always believed it could be so. It is in the experience of every one who operates to find these pus tubes, becoming flaccid and afterward filling up, where there is positive evidence of not emptying through the uterus. I see no other explanation of it except that it drains through the uterus, and I report this simply as an unique instance. It was a case of double pyosalpinx. While curetting the uterus before doing hysterectomy, a spoonful of pus of the thin character of that from the tube after removal came out of the right tube, the largest being at the time recognized as smaller and less tense than some days before; the left tube was not patulous at the uterine horn. This specimen has been in formaline and is hardened, but you see the right tube is thicker at the uterine horn. It is simply a split uterus with the tube and ovary attached on each side. The right tube is thicker than the other; the fimbriated extremity was occluded. After removal a small sound could be easily passed from the right tube into the uterus. The tube could not drain itself entirely on account of lying on a lower plane than the fundus.

Removal of Uterus without the Pus Tubes on Account of Firm Adhesions.

The fourth case I present, in order to get the opinion of the Society and of those who have had more experience than I. It was

about two weeks ago that Dr. Cleveland asked me to finish a clinic for him. This woman had an adherent uterus with double pyosalpinx. It was with considerable difficulty that the rectum was separated on account of the dense adhesions, but, after working half an hour, I could not separate the ovary and tube of either side. The best that I could do was to take out the uterus and clamp off the tubes on both sides, treating the case extra-peritonæally with gauze packing. The woman has done perfectly well. From the size of the tubes, there must have been pus in them. I do not know what the ultimate result will be. I did the best I could; some one else might have been able to do it. If I had operated through the abdomen I could have removed them, but with my fingers through the vagina I could not. In connection with this case, I want to say that I tried a method I like very much. I separated the rectum on one side and the bladder on the other, and, instead of clamping or tying the uterine arteries, I bisected the uterus, protecting the intestines with my fingers. In a small vagina this gives much more room. I pulled each side down separately and in that way clamped from above downward. I think it is an excellent way. There is nothing in the specimen except simply a uterus divided in half.

Removal of Appendix by the Vagina.

The fifth case presented was operated on five years previously by Dr. Lusk; he removed one ovary and tube. The other ovary and tube became infected and she applied to Dr. Cleveland for relief. There was a large ovarian abscess on the right side. He operated through the vagina (all these operations reported have been done through the vagina) and with considerable difficulty on account of old adhesions. In separating everything he pulled down an adherent appendix about three inches long and took it out through the vagina. It was rather an unique place for doing appendectomy and I report it on that account.

Dermoid Cyst Removed per Vaginam.

The sixth case is a pretty specimen of dermoid cyst, done by Dr. Cleveland three days ago, through the vagina also.

DISCUSSION.

Dr. GEORGE T. HARRISON: I would like to ask Dr. Broun a question to start the discussion. What were the indications for perform-

ing an operation in the case of that patient in whom he found the pelvis full of blood? That was nothing but a case of hæmatocele.

Dr. BROUN: I do not know what started the hæmorrhage. The indication was that here was a patient who had been curetted in whom nothing was found at the time. When she asked for her discharge, three weeks afterward, we found the whole pelvis full of blood. I did not think it would be very wise to let her go out. She was not operated on for a week after this was first noticed, and, during that time, to the touch the effusion had become larger, and, while there was no pain connected with it, still it seemed to me the indication was simply a collection of blood that was getting larger and an operation was the proper course. There was a diseased tube but whether it showed evidence of rupture or not, I do not remember.

Dr. J. D. EMMET: Why do you call it ectopic pregnancy?

Dr. BROUN: We have all begun to recognize that all these pelvic masses coming on with supposed miscarriage or with disturbed menstruation without temperature are ectopic gestation, when there is no evidence of perimetritis.

Dr. W. GILL WYLIE: It seems to me that the operation was justifiable, and I still think that it was a hæmatocele. I have been able myself in quite a number of cases to diagnose extra-uterine pregnancy in very early stages. I am satisfied that quite a number of cases like this one, even in that early stage, will bleed from the fimbriated extremity. I have two or three specimens that demonstrate that perfectly. I reported eleven cases about a year ago, and just after that I had a young French woman who came to me simply with a history of delayed menstruation and continued flow, without any explanation. She was a perfectly healthy woman and had one child. She came to find out what was the matter, and when I examined her, I could feel distinctly a small mass a little larger than a normal ovary, just above where I could feel the ovary. I sent her to the hospital and examined her carefully. I did not find anything but little shreds in the uterus and that made me suspect it was extra-uterine. I kept her in bed two weeks, the mass enlarging slightly. I did not operate on her then but sent her home with clear and definite instructions (her husband was a chemist). He watched it, and I told him, at the slightest acute pain, to report at once. The couple came back in about a week and said she had had quite a sharp pain but no temperature and that the pain had disappeared. When I examined her I found the same tumor and also a diffused feeling about

it, as though there was some blood. I found, on operation, that there had been no rupture, however, but there was quite a free bleeding from the fimbriated extremity. I am satisfied that quite a number of cases that we once supposed were hæmatocele are what we now call salpingitis. I am satisfied that when we become more watchful, we will be able to diagnose extra-uterine pregnancy from irregular menstruation in healthy women. The case of peritonitis that Dr. Broun reports I would not hesitate to diagnose as an abortion and sepsis in the uterus. Confined septic peritonitis acts very differently from cases in which there is drainage. The patient may have had a mild sepsis in the uterus which affected the peritonæum. I think that is where salpingitis starts two-thirds of the time. I had a case not long ago that was punctured posteriorly. I took the uterus out afterward. The adhesion of a portion of the tube was mixed up with the fold of the intestine. I have a fair sense of touch, but I could not distinguish one from the other sufficiently through the vagina, so I had to open the abdomen and do the operation. If I had a case of that kind, I would open from above. I think Dr. Broun's case will probably come out all right, but it will be a very tiresome convalescence if those tubes have anything left in them. I can do salpingectomy very much better through the vagina, since I have had more experience. I have had 220 cases, with not more than one death. If I cannot finish an operation by the vagina, I will not do half an operation.

Dr. J. N. WEST: I would like to ask Dr. Broun why the appendix was removed where there was an ovarian cyst.

Dr. BROUN: The appendix was attached to the cyst. It was very long, abnormally long.

Dr. GEORGE H. MALLETT: The case that Dr. Broun related of unsuspected ectopic gestation, emphasizes the importance of thorough examination of all cases of miscarriage, and the importance of curetting on the back and not on the side. A practitioner with whom I am acquainted not long ago was called to a case of miscarriage or supposed miscarriage, and he felt a small mass on the side, mistook it for an enlarged tube and curetted. He removed some of the decidua and thought that the ovum had escaped. During the night he was hurriedly summoned, and when he arrived there the woman was in a state of collapse and she died before anything could be done. It was a case of ectopic gestation and ruptured after manipulation during the curetting. The case that Dr. Broun spoke of reminds me of this one. In regard to that case of patulous tube,

I have never seen a pus tube that drained through the uterus. I have examined quite a number after removal, and every one that I have examined had a constriction near the uterine extremity, and, by compressing them, I have found that the pus exudated from the fimbriated extremity more readily than from the uterine. In a case of hydrosalpinx that I have seen the tube became distended and the patient would complain of pain; this would be followed by a gush of fluid and she would be relieved. I have never seen a case of patulous pyosalpinx.

Dr. J. D. EMMET: I have seen several cases of pus tubes that emptied into the uterus but one, a patient of my own, presents so marked a history that I will tell it here. I presume it was gonorrhœal. It was ten years ago, and we were not so accustomed then to examine discharge from the uterus microscopically. I believed at first that the patient had simple vaginitis and I treated her for this condition. But the vaginitis, in spite of vigorous treatment, would not yield but retreated up the vagina, attacked the cervix, which became deeply congested, and then gradually disappeared from the vagina. I was treating this case every day and a few days after the cervix was attacked she complained of tenderness about the uterus which enlarged and in the course of a week she complained of considerable tenderness in the pelvis. Uterine discharge was not marked. She was taking three long vaginal douches daily. For two weeks she did not come to my office but remained at home on account of severe pain. After this interval I examined her, and for the first time I found a tumor about the size of a small egg in the left side in the region of the left tube which I am certain was not there before. The pelvis was much congested and tender. I sent her home with instructions to rest in bed and come back to me in about two weeks. When she returned I examined her again and found that this tumor had disappeared. It was absolutely impossible to feel any tumor or mass on the left side. I questioned her about it and she said that about a week after she had seen me she felt a sharp pain in the left side and the next day, in the course of seven or eight hours, she had noticed a discharge from the vagina of greenish, thick and bad-smelling matter; that this had lasted for a few hours and had then stopped with the relief of pain. The mass in the left side never returned and a year later she became pregnant. This is the only case with a clear history I have seen in my own practice, but I have seen several cases otherwise where a

tube has filled up and become larger or smaller, with a concomitant discharge of fœtid pus from the uterus.

Dr. A. P. DUDLEY: There are some interesting points in these cases that I wish to criticise and the first is this, that I believe we should bear in mind that there is very little pain in the early stages of extra-uterine gestation, especially if the tube and ovary belong to a primipara. I have seen several such cases operated upon, one two weeks ago, in the Post-Graduate Hospital, where I curetted the uterus for the hæmorrhage, made a possible diagnosis of extra-uterine pregnancy and did laparotomy.

Dr. PAUL F. MUNDÉ: Why did you open the abdomen?

Dr. DUDLEY: I could feel a tube in one side, and I make it a point never to leave a case until I have benefited it. In that case that was the point: the fact that in the early stages there is very little pain, yet symptoms of pregnancy. In respect to the second case, that is simply a case of abortion. In the Harlem Hospital we have three or four a day. I have six laparotomies lying there to-night in a ward not larger than this room. I do not operate on them in the early stages, not until I can get something definite. I do not operate, because there is a great deal of trouble in getting them over the shock in peritonitis in the early stages. I wait and circumscribe the inflammation; I confine it to the pelvis and operate later on. With respect to the third case, drainage of pus through the uterus, I have seen that a good many times but positively twice. I have seen pus discharge under my eye. I had a case that was put in my hands by Dr. Gordon while he was away in Europe, and she started up salpingitis. She was a widow. I treated her for the salpingitis by local applications. I saw the pus come down through the uterus; the distended left tube had collapsed and the pus drained away. I believe that such discharge depends entirely upon the condition of the tube. If the tube is strictured at the uterine-tubal junction you do not get the discharge, but if the tube is horizontal then you may get such a discharge. I have such a case in my house to-night, that has been discharging pus from the uterus for a week. It is a case of gonorrhœal sepsis. I have not dared to operate on the woman, because her pelvic condition was so bad; but I have seen pus discharged from the uterus every day, and in a week's time the size has decreased until I can feel the top of the tube. With regard to the fourth case, that of leaving the tubes and ovaries and doing hysterectomy, the French surgeons do not make any bones of it at all, and I believe that half of the success in the 412 cases that

were reported by a certain operator, with only nine or ten deaths, was simply due to the fact that he took out the uterus and clamped the tube, leaving it there. I saw him do it in the hospital. They leave the tubes rather than remove them. We take them out and run the chance of peritonitis, but they do not take any chances. Dr. Broun's case will come out all right. She may have some local peritonitis but it will pass.

Dr. HARRISON: That was Segond's method. I saw him operate thus in this country.

Dr. DUDLEY: Dr. Broun speaks of it as an operation in which he does not put any clamp on, simply splitting the uterus and tube, and the operation stops hæmorrhage.

Dr. DUNNING: In reference to the case of tubal pregnancy, I would like to know if flowing was a prominent symptom; for the the reason that having met with two cases of ruptured tubal pregnancy whose only symptoms were constant flowing, pain, and the presence of a small mass on one side, I have learned to view such symptoms with suspicion.

Dr. WYLIE: I would just like to say one word about the pus coming from the tube. The first case I had at St. Luke's Hospital, before operating, while she was under ether, I put her on her back, and there was no doubt that there was a sort of material that I had seen before, but I have never seen a case of active pus unless there is destruction of the tissues, and then I do not believe the tubes get well. It is almost incredible to me that a tube could be distended to hold an ounce of pus and drain away perfectly so as to get well.

Dr. J. D. EMMET: I think the tubes in these cases collapse and probably become impervious, the cilia being destroyed entirely.

Dr. MUNDÉ: If I may be permitted to make a few remarks, simply not to be left out in this discussion, in which I am exceedingly interested, I would say that I think there is nothing more difficult in our specialty than to decide the question as to whether an operation should be performed, whether the abdomen should be opened or not, in a doubtful and early case of extra-uterine pregnancy, with presumably and probably rupture. I confess I am still so doubtful about this that I sometimes, when I see such a case in consultation, feel that I am doing wrong not to open the abdomen, and, again, cannot make up my mind that it is necessary to do it; because I have seen several such cases of early tubal pregnancy after probable rupture where the patients have recovered without

an operation. I wish I could positively decide in my own mind when it is absolutely necessary to do an abdominal section in such a case, and when it is justifiable not to do it. I have been so much interested in these cases of Dr. Broun that, as he was talking, I ran through my mind a number of cases that I have seen, one within two weeks, that were unquestionably ruptured tubal pregnancy, such as Dr. Wylie stated, in the early stages, as shown by the attacks of pain, the irregular menstrual flow and discharges of decidua, and still there seemed to be absolutely nothing in the pelvis to warrant opening the abdomen. I have seen such patients get well without any sort of an operation, simply by rest, quiet, and ice to the abdomen. But I do not wish to be put on record as fearing an operation in such cases. I simply wish to say that I do not think that every case of early ruptured tubal pregnancy absolutely necessitates opening the abdomen and removing the ruptured tube. Of course, it is better perhaps to remove it on general principles; and if in doubt I should decide in favor of operation. If I were a man who always opened the abdomen on the slightest indication, why, of course, I would do it in ruptured ectopic pregnancy.

As regards the discharge of pus through the tube into the uterus, I have never seen, in the numerous laparotomies for pus-tubes that I have performed, a case where it would seem that the pus could have passed into the uterine cavity. I have not seen one case where the tube was distended by pus, where it was not absolutely impossible to force the pus into the uterine cavity. I can imagine that possibly under the pressure of the finger during a vaginal examination pus might be forced from the tube into the uterine cavity, but I think it a great deal more likely that the pus would burst through the fimbriated extremity and infundibulum into the peritonæal cavity. Still, I do not doubt the possibility of tubal pus discharging into the uterus; but, as to the statements of patients about such discharges of pus, I would not place much reliance on them. Patients do not know whether the pus comes out of the uterine cavity or out of the tube. Clinically, I have never seen a case where I felt sure that a pus tube discharged through the uterine cavity.

Dr. HARRISON: I would like to make remarks about two points. One is the criterion to help us to determine when to operate and when not to operate in a case of ruptured ectopic gestation. I think we can decide the matter very often in this way. You are called to see a patient in which the clinical history and vaginal examination lead you to believe that the woman has tubal pregnancy

and that rupture has taken place. Now if, in making the bimanual palpation you find by the side of the uterus a distinct tumor, I should say that this would contra-indicate an operation, because the bleeding had taken place within the adhesions, and there is the formation of a hæmatocele, that we know will get well without an operation. But in cases in which there is no tumor and the hæmorrhage is threatening I think, under all circumstances, an operation is indicated; as in that case, Dr. Dudley, that you operated on so successfully—a case in which the patient had symptoms of bleeding for several days, and there was no distinct tumor. Now there is another point that I want to speak of, and Dr. Broun has touched upon a great many important subjects in gynæcology, and that is the treatment of those puerperal cases in which there is a septic infection. The infection undoubtedly took place before Dr. Broun ever came in contact with it. In regard to local treatment in these cases, any number of these people, in my opinion are lost by the local treatment. I think that it is absolutely contra-indicated to go inside of the uterus in that way in those cases in which the infection has gone beyond the uterus; and, therefore, the treatment of Dr. Dudley I think is by all odds the best treatment that can be adopted in such cases. There are two sorts of treatment. Some are almost always in favor of the intra-uterine treatment, using the curette, and others believe that you should abstain, because you interfere with the delicate processes, you disturb that nice adjustment by your local therapeutics which Nature has adopted to localize the morbid process.

Mental Disturbances in the Female produced and cured by Gynæcological Operations.

By Paul F. Mundé, M.D.

(See page 51.)

Discussion.

Dr. Wylie: I would like to ask Dr. Mundé what he means by insanity; how he would define it.

Dr. Munde: I mean by insanity not hysteria, or a temporary mental aberration, but a permanent mental aberration, a condition of the mind which renders the person incompetent to attend to his or her affairs. I dare say that if this question were asked an expert

in insanity in the witness chair, he would give an entirely comprehensive answer. If I were asked on the witness stand what was insanity, I would be obliged to say that I do not know, as I have not studied it up; but I think I know a really insane person from a well person.

Dr. WYLIE: Do you believe they are insane without a disease of the brain? Would you call it insanity?

Dr. MUNDÉ: Dr. Wylie, you ask me too much. I do not know whether you are insane this minute or not, or whether I am.

Dr. WYLIE: We cannot discuss this paper unless he defines insanity.

Dr. MUNDÉ: The title of my paper is "Mental Disturbances of the Female, Produced and Cured by Gynæcological Operations."

Dr. J. D. EMMET: It seems to me that Dr. Mundé means the same thing that we do.

Dr. WYLIE: We talk about insanity when we do not mean it.

Dr. MUNDÉ: If a person has melancholia that induces him to commit suicide that would be insanity, would it not?

Dr. WYLIE: I am asking you.

Dr. HARRISON: We will take his definition; he does not go into the pathology of it. He states that it is a perverted mental condition of which he speaks.

Dr. WYLIE: My belief is simply this. I never was much of a believer in operating on the genital organs in such cases. Often laparotomy leads to insanity. But the rule that I have adopted for many years is simply this. In every case where the mentality was disturbed to such an extent that the person would be considered insane, I would invariably have an expert pronounce on it. If he pronounced that the person had disease of the spinal cord, I would not operate on the genital organs; but if he says that there is no disease indicated, so far as he can make out, I would operate. They pretend that they can, and I believe they can in many cases, determine whether it is actually brain lesions, or lesions of the nervous system or spinal cord. Excluding those cases where there is actual disease, I have operated, not always to remove an ovary, but certainly to reduce the uterus to its normal size, and they were unquestionably cured. If they were not insane I do not know what you would call it. They had unusual dislikes, and other forms of insanity. The more marked cases of melancholia I have always considered insane. If a person wishes to kill herself, the first point I make is whether the person has brain lesions or lesions of the

nervous system, and if they had not and there is a uterine trouble, I would do an operation; and I could demonstrate that in ten or fifteen clear cases where the patients were pronounced insane, and there would be nothing for them except a retreat or an asylum, unless something could be done to relieve them, these cases have been cured. The proof of several of these cases has been that similar uterine conditions have brought on a return of the same mental condition. It has happened to two or three of my patients; for instance, in one case where there was enlargement of the uterus due to fundus growth, small fibroids, the uterus was reduced and the patient remained well two years, but, knowing that, where there is one fibroid you may expect more, I predicted that her mental trouble would return. It did return in two years. I did a complete vaginal hysterectomy and the patient was cured and is living a normal life. I do not believe that an abdominal operation cures epilepsy. I have another case where the patient was relieved by local treatment. She was curetted and I could not make out actual disease, but I opened the womb and found the tubes diseased and took them out and she remained normal for several years. The attacks returned and I took the uterus out and she recovered for a little while but she later became insane. I would not class that as a typical case of melancholia. There are a great many cases that are so badly balanced, the balancing power of their brains is so badly developed or so slight, that it takes very little to put them in that condition, and it would be pretty hard to distinguish or class them as sane or insane. At any rate it throws them off so that they are in an abnormal condition. Some of them you call hysterical. We should distinguish these people from the normal and classify them a little differently. That is why I wanted to know Dr. Mundé's definition of insanity.

Dr. HARRISON: I think one great difficulty about it is to determine whether a patient is insane or whether she is not. Therefore, when an operation is performed, some may consider them cured and others may consider them not. I have a patient now who has bothered me for a long time, and she is one of the most remarkable cases I have seen in my life. Her form of insanity is a fondness for litigation. She has been in more suits than anybody I know of. She is engaged in a suit now in Memphis, Tenn., and I am told that they consider it one of the most remarkable cases. That woman on the witness stand shows so much skill, sagacity and intelligence, that the company against which she brought suit

were unable to prove that she was insane. The jury were on her side. The judge stated that he thought it was one of the most important cases that ever had been tried before him.

Dr. E. G. BRYANT: Had she any uterine trouble?

Dr. HARRISON: She had perimetritis. I treated her for a number of years; I never could decide myself whether her conduct could be traced to the disease. She was confined by her friends in an insane asylum in this State, and I think the gentleman who had charge of the insane hospital acted in the strangest way that I ever could conceive a man being willing to act under the same condition. This woman raised such a racket and got so many people interested in her there, that this physician was glad to get rid of her and he discharged her on her promise to leave the State. He wrote to me: "Doctor, I hope this patient will not come to the city. She has promised me to leave the State." I thought to myself that man is absolutely inconsistent. That woman is either insane or not insane. If she was not insane she had no business to be incarcerated there. In such cases as this I must confess that I am at my wits' end to determine whether they are insane or not. It is sometimes very difficult to determine whether you should operate on them or not.

Dr. J. D. EMMET: I was surprised that Dr. Mundé did not refer to a class of mental disturbances which I have met very frequently. I have known cases of marked mental disturbance produced by the presence of scar tissue, for example, in the cervix. Probably none of us here present, or at least very few of us here present, will deny the fact of scar tissue in a laceration of the cervix, and there are very few of us who have had to do an operation for laceration of the cervix, who are not able from long experience to recite many remarkable facts of improvement in mental disturbance. I think most of us have seen the same condition in the rectum. Dr. Wylie certainly has.

Dr. WYLIE: I operated on a woman for piles, and she went to the insane asylum.

Dr. J. D. EMMET: Dr. Wylie has spoken of the effect of the scar tissue in the rectum after healing of fissures. He wrote a paper a few years ago in which he referred to the same thing, a removal of small fissures in the rectum which left, in the process of healing, scar tissue. We know the effect of this tissue in the male urethra and we know the very marked mental disturbance to which it sometimes gives rise. I am surprised that Dr. Mundé did not touch more upon that fact in his paper.

Dr. DUDLEY: The subject interests me exceedingly, because it is something we know so little about; but I like always to stick to the subject, in a discussion of the paper. Still, I am unable in the present case, because, if I understood Dr. Mundé, he does not consider reflex disease. In my judgment, mental disturbances that would be benefited by uterine operations are almost entirely reflex. They may be so long continued that the reflex will become a habit and the brain become diseased. If the patient is relieved by uterine operation then the effect upon the brain is reflex. In rgard to those cases I see of mania following gynæcological operations, I operated on a woman for laceration of the cervix and perinæum, and she had acute mania which was so severe that we had to pinion her in bed. I could not ascribe any cause for the mania excepting an exceedingly nervous condition before the operation was done; the woman was on the point of hysteria. It was a bare possibility that iodoform may have had something to do with it. I do not recall using iodoform except in dusting the vagina. To illustrate the opposite condition, I was called to a Bloomingdale Asylum case by the surgeon in charge. It was a case of mania in a woman who had been incarcerated, and it appeared that her mania was directly traceable to the delivery of a child. I believe that such cases are due to sepsis. As an illustration of this point is the case of a woman who died in the Harlem Hospital yesterday. She was confined two months ago, and since then her mind had been somewhat unbalanced. Yesterday morning she fell from the window, broke both arms and fractured her skull. That was a puerperal mania of two months' standing. To show that such cases can be cured, in the case that I examined at Bloomingdale, I found the vagina full of buttons, garters, safety pins, pieces of cotton, a comb, a tooth brush and several other articles, and together with it all was the odor of sepsis. I gave the woman chloroform, curetted the uterus thoroughly and brought away a large quantity of what was apparently fungoid growths, and she got perfectly well. She is living abroad at the present time. Respecting lacerations of the cervix and perinæum, attended by mental aberration, the symptoms are certainly reflex, in my judgment, and the patient will get well if they have not continued for such a length of time that the brain has become diseased. Of 105 cases at one time of ovariotomy for hystero-epilepsy and catalepsy, and various mental conditions which seem to attend the function of menstruation, more than 50 per cent. of them were not benefited, and in many other cases it was doubtful

Regarding the question of hysterectomy and the mental disturbance which may take place as the result of this operation, I can readily understand how a woman may be brought to a condition of melancholia. I have seen such cases. That is a mental depression, the result of long continued streain, not due to the operation.

Dr. BROUN: I have not had much experience with insane patients, yet within the last few years I have operated on five or six at Bloomingdale Asylum, none of them having been laparotomies. In every case the operations were done for tears of the cervix or perinæum, and in cases of mania of two or three months' standing—puerperal mania. It seems to me in every case you would think the gynæcological operation would benefit, and in not a single instance has the patient been benefited in the least. In connection with that I must say that I had the pleasure of removing from the cervix of an insane patient at Bloomingdale some stitches that Dr. Mundé had put in six months previously. It gives me pleasure to say that the stitches were beautifully placed, and that they were as fresh as if they had been put in only a week. She left the Mt. Sinai hospital insane and was sent to Bloomingdale. She is still insane. These operations of mine were done with the hope that they would do them good. I think one or two were cured, but Dr. Dolt has told me that he could not say that the operation had benefited any of them. My experience has been very favorable.*

Dr. HARRISON: Dr. Mundé, have you seen any cases of a form of insanity that you do not meet with every day, what they call recurrent insanity, where there are perfectly well intervals and then insanity? Those cases I should think might be benefited by operation. I am sorry Dr. Coe is not here to-night. There is a patient I operated on and he afterward operated on—a trachelorrhaphy. I would like to know from him whether the benefits were very marked and whether they were permanent or not. That class of cases it would seem might be benefited by operative procedure.

Dr. BROUN: I had a case of this class; there was a large uterus, a tear of the cervix and a tear of the perinæum, and the woman

* Upon talking to Dr. Dold lately he tells me that in one case he thinks the return to a normal state was hastened by the operation. This certainly holds out some hope in this class of cases. I have at this writing just repaired the cervix and perinæum of a Bloomingdale patient who insists that this would cure her. It is with interest that I watch the result. It will certainly help her physically if not cure her.

insane. The husband in this case was willing to do anything that he thought would possibly benefit his wife.

Dr. HARRISON: The operation ought to do good, because they generally get well in these cases.

Dr. DUDLEY: Any history of syphilis?

Dr. BROUN: I did not inquire into it. I do not know.

Dr. J. D. EMMET: I think a very important thing in the discussion of Dr. Broun's insane cases is the question whether involution of the uterus actually took place after his operations on the cervix.

Dr. BROUN: Some of them got well, but the doctor did not believe that the operation hastened their recovery. It is the natural termination of all these cases to get well.

Dr. MUNDÉ: I do not know that anybody has brought out anything in the discussion that I did not touch upon in the paper more or less superficially (I said the paper did not make any attempt at completeness), with the exception of one point, and that is the question of puerperal insanity, which I did not intend to touch upon at all. I do not believe that puerperal insanity has anything to do with any local lesion in the pelvis of the woman, except if the latter is sufficiently severe to cause a great loss of blood or a great mental shock or in some way influence the mental condition. The mere fact of a lacerated perinæum has nothing whatever to do with puerperal insanity, and that is the point that was brought out in the discussion that I intentionally did not touch upon. As far as Dr. Wylie's question about insanity is concerned, I must confess, when Dr. Wylie will tell me who is insane and who is not, he will do more than the majority of experts can do at the present time. I mean insanity such as would be ordinarily considered such. Patients who are sent to Bloomingdale Asylum are supposed to be sent there for insanity, and I claim that such patients would not be relieved ordinarily by a gynæcological operation, unless they had in their minds distinctly the insane conviction that the operation on that lesion of the genital organ was going to cure them. Then it would be a moral or mental effect. As far as the laceration of the cervix is concerned, Dr. Emmet evidently did not hear that I said that I had seen some extraordinary and remarkable cases which were benefited by that operation.

Dr. J. D. EMMET: I remember that perfectly but, taking it with the context of the paper, it intimated that you thought such an

effect occurred more as a faith cure than as an actual result of the cure of the local lesion.

Dr. MUNDÉ: I said I was not able to explain the mysterious connection between the laceration and the mental disturbance, but that I had seen such cases; and I have also said that if, under ordinary circumstances it was impossible to discover any other cause for the mental aberration and a genital lesion was present I should consider it my duty to repair that genital lesion with the possible hope that the operation might do good.

Official Transactions.

J. N. WEST, *Secretary.*

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, November 4, 1897.

The *President*, E. E. MONTGOMERY, M.D., in the Chair.

Extra-uterine Pregnancy with Involvement of the Appendix Vermiformis.

Dr. L. J. HAMMOND: Ida M., single, mulatto, aged twenty-two, was sent to the Samaritan Hospital by Dr. Howard Anders, on the evening of October 16, with the following history:

Had enjoyed excellent health with the exception of the diseases of childhood and three or four attacks during the past year (she not being sure whether it was three or four), of pain in the right iliac region, of short duration, until September 13 of the present year, when she was taken with severe colicky pains in the hypogastric and right inguinal region. The pain, which was constant, was severest in front, especially about the umbilicus, this intense pain lasting for three or four hours and slightly subsiding though never disappearing. Since September 13 the pain has been severe at times only, subsiding for several days, though the tenderness over the right inguinal region was very decided during the period between September 13 and her admission on October 16. Temperature ranged between 103° and 100° and the pulse between 120 and 90. On the

afternoon of her admission, the pain rapidly increased in severity with vomiting, marked distension of the abdomen, restlessness, legs flexed upon the abdomen and all the symptoms that go with a well-defined attack of appendicitis. There was also marked fullness in the right cæcal region. The pains were the most intense that I have ever seen a patient suffer.

The case was prepared for operation on the afternoon of the 16th, by the resident, because of the history that had been furnished him by her attending physician, before I had seen her. When I arrived, about 1 o'clock, the case presented symptoms which showed the need for urgent interference. At this time the temperature was rapidly declining, it being subnormal, where but a short while before it had been 100°, the patient showing extreme pallor.

I made a hurried vaginal examination and found the cul-de-sac markedly distended with what I supposed, from the history just narrated, to be probably a ruptured pus sac. The uterus was pushed up against the abdominal wall. The pain was so intense that no further examination was made and the operation was done at once, the woman being already prepared before my arrival.

The abdominal cavity was opened by the usual median incision and what I supposed to be pus was from 1 to 1½ quarts of blood largely coagulated. After removing this and washing out the abdominal cavity with sterilized normal salt solution, the further examination of the pelvic contents revealed this large ruptured tube with the vermiform appendix firmly adherent to the fimbriated extremity of the fallopian tube and both bound down to the abdominal parietes. I here show you a specimen of ruptured tubal pregnancy and also the vermiform appendix, which it was necessary to separate from the former in order to bring it up sufficiently into the incision to enable me to properly ligate it.

The posterior portion of the body of the uterus as well as the peritonæal surface of the rectum, and extending over to the right inguinal region, were thoroughly covered with islands of placental tissue united to each other by fibrous bands—its own sinuses. After ligation of the uterine annexa and the appendix, it was with the greatest difficulty that I succeeded in removing this placental tissue, which was everywhere to be found in and around the pelvic floor. The bleeding was excessive and it was decided to pack with sterilized gauze the entire cul-de-sac. After again thoroughly irrigating the cavity with hot normal salt solution, the upper portion of the incision was closed. The left ovary being healthy was

not removed. Three enemas of normal salt solution were given after the operation at intervals of three hours.

The patient has not shown any bad symptoms whatever, convalescence progressing unusually rapidly.

With the combined condition of appendicitis and extra-uterine pregnancy, I think it becomes a matter of importance to determine which preceded the other. With this object in view I have endeavored to fix the time of the first and last coitus. It is as follows:

Three or four times, the patient states, from August 18, 1896, until December of the same year; not again until April, 1897, and not after that until July 1 of this year. She states that the menstrual period has always been regular and that she has never been pregnant until this year, although menstruation has usually been accompanied by some pain. She states that since July it was not as it formerly had been, being not only more scant but more or less light colored and coming on frequently throughout the month; in other words, she had an almost constant muco-sanguinous discharge containing shreds which I have no doubt under the microscope would have been shown to be portions of the decidua.

There is, therefore, in this history if not positive evidence of extra-uterine pregnancy certainly symptoms that would make one strongly suspect, had this history been given before the rupture took place. With this fact settled it seems to me that the natural conclusion would be that the attack of pain which came on so suddenly, accompanied by obstinate constipation, vomiting, marked elevation of temperature and pulse, intense pain in the cæcal region running a course of hours and gradually subsiding under treatment by free purgation (though never subsiding sufficiently to permit the patient to assume the recumbent position without great suffering) justifies one in concluding that this final attack of appendicular inflammation was secondary to that of the tubal pregnancy.

On further questioning, however, the woman states that there have been frequent attacks of pain in the same region lasting a few hours; a dose of castor oil or some purge relieving it. There is no doubt, therefore, in my mind that a morbid change within the appendix, causing it to become adherent to the fimbriated extremity of the fallopian tube and thereby arresting the function of transmission of the ovum through the tube to the uterus was the cause of this extra-uterine fœtation.

Had it been possible to have made an examination of the uterus and its appendages when she suffered pain first in September, it

would have been possible to have determined at least the presence of a pathological condition, although I am not sure that I, at least, would have been able even at that early period to have positively determined the presence of tubal pregnancy but would probably have considered it one of appendicitis or, if not that, acute inflammation of the tube and ovary, since the latter are also accompanied by pain and tenderness in the same fossa, nausea and fever. The tenderness is not so well marked in disease of the uterine appendages as it is when the inflammation involves the appendix, nor does the temperature go up so rapidly; but the nausea and vomiting may be greater in the former than in the latter. It may be said to be if not impossible extremely difficult to differentiate between inflammation of the right tube and the appendix, especially if the latter has dropped down, as it not infrequently does, when pathologic, into the region of the uterine appendages, where there is no decided enlargement of the latter, and, even when there is enlargement, especially if it be an abscess or a cyst, far out toward the fimbriated extremity of the tube, it may here be difficult to determine whether it is appendicular or tubal.

DISCUSSION.

Dr. CHARLES P. NOBLE: I did not have the pleasure of hearing the paper but I would like to refer to a case on which I operated, having a number of local diseases; it was one of multiple fibroids, extra-uterine pregnancy, ovarian tumor and the appendix involved in the mass. I presume appendicitis came from the peritonæum and not infection of tube. That was the largest collection of diseases that I have operated upon. From the standpoint of diagnosis it was impossible to make an accurate one.

Dr. GEO. ERETY SHOEMAKER: I have had a number of cases where the tube and appendix were both involved, but I have never yet failed to find, on bimanual examination, that where the tube and ovary were involved in a serious inflammatory disease the mass was very much more readily palpated from below than when the appendix alone was involved. In other words, the appendiceal mass has been, in my experience, higher up in its relation to broad ligament and uterus, even though the appendix has dropped into the true pelvis. I think there are cases in which it is impossible to say which was the primary lesion. I depend a good deal in giving an opinion that an ovary and tube are involved, upon finding the mass very low down and close to the side of the uterus. I operated this

week where I supposed the appendix was involved as well as the appendages. I felt sure of the tubal and ovarian disease, but because the woman had had for many months severe catarrhal enteritis appendicitis also was suggested. I found that the appendix was comparatively normal, the tube and ovary totally destroyed, probably by tubercular inflammation. This was a profoundly septic case, but it is recovering slowly under good drainage.

Dr. C. P. NOBLE: In some cases I think it is impossible to make a differential diagnosis and I think this is particularly true in puerperal cases. Since Dr. Shoemaker has discussed the point I recall very well several cases I have operated on, post-puerperal cases, which were supposed to be appendicitis and which proved to be pus tubes. The first case was a woman of historical interest, because she was the first woman upon whom a conservative Cæsarean section was done in this country and the first woman to have two consecutive symphysiotomies. She was delivered once by inducing premature labor very early, but labor was so difficult that symphysiotomy was elected afterward. In this case, after the second symphysiotomy, she developed right-sided inflammation high up in the appendix region and the question came up whether this was appendicitis or tubal disease. There was no apparent reason why she should have pus tubes, as she had no apparent infection after labor and both she and her husband stated that there had been no sexual intercourse after labor until the time she was taken ill. It was even rather high for an appendix abscess. The broad ligaments on both sides were quite flaccid and felt entirely normal on examining from the vagina. When the abdomen was opened a pyosalpinx was found. The explanation was that, the woman having had Cæsarean section, the uterus was fastened high up and displaced the tube in the abdomen. I recall a case reported as appendicitis complicating labor: I operated for Dr. Cross, of Jenkintown. The patient was seen eighteen days after labor and had an abscess high up in the appendix region and there again the broad ligament was quite normal on the right side. The patient was very sick at the time, the temperature having risen to 103° F. or 104° F. for two weeks. I was quite content with simply incising and draining, and I supposed at the time that it was an appendix abscess. At that operation I wounded the bowel and subsequently had to operate to close the fistula. When this operation was done I discovered that it was not an appendix abscess but a pus tube I had operated upon.

I remember another case in which the abscess was very high up

and symptoms were all referred to the renal region. There again the woman was almost moribund when operated upon and drainage only was attempted. I had occasion within two years to operate for a hernia which appeared at the site of the incision for drainage and found the appendix uninvolved. There were slight adhesions in the appendix but she had intra-peritonæal abscess of pelvic origin and not of appendicular origin. In her case I found a small ovarian tumor at the second operation which was also removed. These three cases of post-puerperal abscess I recall very well, so that I think, at least in post-puerperal cases, we may have very great difficulty in making a diagnosis. I have tested the sign Dr. Shoemaker relies upon and it has failed in each case.

Dr. J. M. FISHER: I recall a case which came under my observation a year or more ago in the Philadelphia Hospital, in which a diagnosis had been made of appendicitis some time previously and operation had been done. Subsequently she was referred to the gynæcological ward, claiming that she still suffered from the same pain she had previous to the operation. Upon examination, I found a right-sided pelvic enlargement and upon opening the abdomen found a pus tube. Whether the pus tube had been overlooked at the previous operation I am not prepared to say.

A few weeks ago I was invited to see an operation for appendicitis by a gentleman who has had some experience in general surgical work. He told me that the patient had the typical pain at McBurney's point and that an examination disclosed nothing in so far as the pelvic organs were concerned. On opening the abdomen he raised the appendix and it appeared to be perfectly normal, but at the site of the incision pus ran out, and, upon passing the fingers down into the pelvis, he found he had to deal with a ruptured pus tube. He closed the lateral opening, and, making a central incision, removed the cause of the pus which had been issuing through the first opening. He declared there was no localized pelvic tenderness, that the patient simply had pain at McBurney's point. There is another interesting point in connection with the doctor's case, that is the fact that the adhesions between the appendix and the right uterine appendage were firm, showing that the woman no doubt had had an appendicitis a long time previously and the tube of that side being thus fixed it might explain the cause of the ectopic gestation. That the vermicular motion of the tube is necessary to transmit the ovule to the uterus is, I think, an interesting question in connection with this case.

Dr. SHOEMAKER: It has been my custom in those cases where there is some difficulty in determining whether both appendix and tube are involved to open in the median line. I made this a point in a paper last year before the Academy of Surgery. I feel that the tube can be more safely dealt with by median incision, that the appendix can be almost as well dealt with as from the side and that it is safer under these circumstances to open in the median line, especially in chronic cases. Where you have a distinct appendicial abscess or where you are operating for appendicitis alone of course the lateral incision is better. I have done this in a number of cases and have every reason to feel that it is good surgery if careful study of the case is made before beginning the operation. No case has died where both appendix and tubes have been removed in this way nor have any complications been met with which have led me to regret the median incision.

Dr. JOHN B. DEAVER: My experience with appendicitis covers many cases. I have always taken the ground that it is not anatomical to operate for appendicitis in the middle line. There are a class of cases which can be dealt with in this way, I grant. Those of us who have dissected a number of bodies know that the appendix lies far from the middle line. How the appendix can be dealt with, safely to the patient through the middle line, when it lies post-cæcal or post-colic and adherent, I cannot understand. It may be a want of manual dexterity on my part that prevents my doing it but I am free to confess on general principles it is rather an unfortunate way to reach it. I have seen a number of cases such as Dr. Shoemaker has referred to. I have cut down on cases of the appendix in extra-uterine pregnancy, such as Dr. Hammond relates. Where the diagnosis is not clear, and we all know that these cases are attended by a great deal of obscurity at times, I think it is safer if we believe that the maximum amount of trouble is in the appendix to first explore that region. An incision of an inch is sufficiently large to admit the index finger, and this will clear up the diagnosis. Of course our experience differs; Dr. Shoemaker's experience differs from my own and he has had no trouble in dealing with his cases. I confess I should fear to attack the appendix from the median line and I think my experience coincides with that of most surgeons who do much of this work.

Dr. L. J. HAMMOND: I always make the lateral incision for appendicitis where the disease seems confined to the right inguinal region. My reason for electing the median incision in this instance

was because I was sure there was a large quantity of fluid of some kind to deal with, and, when this condition obtains, I believe the median to be preferable, owing to the more thorough and rapid means of thoroughly cleansing the entire abdominal cavity. As to the differentiation between tubal and appendicular troubles, there is to my mind no doubt that errors must of necessity occur, especially in the female. In support of this statement I would like to say that an eminent gentleman of this city, visiting New York for the purpose of witnessing some operations in appendicitis cases, was taken to the clinic of one of the most prominent surgeons of New York. The first case of supposed appendicitis operated upon proved to be one of ovarian abscess, while the next case in the hands of another gentleman, supposed to be ovarian, proved to be appendicular. It would therefore seem to me that the means of differentiating appendicular and annexal disease must admit of some degree of uncertainty. A few weeks ago I opened the abdominal cavity in the lateral region for what (after I had made a careful examination) I supposed to be appendicitis and found a pedunculated fibroid tumor having its point of attachment high up posterior to the fundus uteri and adherent to the parietal peritonæum, but with a perfectly normal appendix save a slight amount of adhesion sufficient only to attach the growth.

Displacements of the Uterus from the Standpoint of Treatment; with Special Reference to the Management of Dislocations Forward and Backward.

By W. Easterly Ashton, M.D.

(See page 1.)

Discussion.

Dr. George I. McKelway: 'I was rather surprised that Dr. Ashton persists for one year with the so-called "conservative" treatment with the hope that a year's treatment would restore the ligaments, the guys of the uterus. I believe if a result is not accomplished in much less time than that it would not be accomplished by a year's treatment. I am also surprised that he has not spoken of the Alexander operation. My own experience with it in cases where there are no adhesions has been favorable. It certainly does

avoid some of the risks of abdominal section and gives an excellent result. I notice in speaking of using sutures in the uterus that he passes them only through the peritonæum and goes on to speak of the fear or fact that if the peritonæum is not secured to the abdominal wall by other sutures, through-and-through sutures, that these fixation sutures may strip the peritonæum from its attachment to the abdominal wall. I think the preferable method is to include in the fixation sutures some few fibres of the muscle. This will obviate the possibility of such an accident as he anticipates and will permit the closing of the abdominal wall in a better way than by through-and-through sutures; that is by closing the peritonæum by fine silk or catgut, the fascia by the silver wire mattress suture, and the skin by an intra-cutaneous suture of fine silk or catgut. I know some gentlemen claim to have had unfortunate experiences with buried silver wire sutures, but I have used them to close the fascia in every case of abdominal section I have done in the last two years, with uniformly good results.

Dr. CHARLES P. NOBLE: With most of Dr. Ashton's paper I think we are most of us in accord, and, as he himself suggests, the point which might elicit discussion is the question of the proper operation for retrodisplacements of the uterus. I agree in part with what the Doctor has said about the bad results which have followed ventrofixation, and I was sorry to find that Dr. Ashton continued the use of the word. I think the use of the word ventrofixation is very pernicious, as it teaches a doctrine which he himself repudiates, namely, that the uterus should be *fixed* to the abdominal wall. If we fix the uterus to the abdominal wall, as the paper has very clearly pointed out, very considerable risks are run that difficulties in labor will follow. The technique which has been described is very similar to that of Dr. Kelly with the merit of leaving the uterus suspended in the pelvic cavity and yet freely movable. There is no doubt this method has given the best results and less complications from the standpoint of labor. But even this method is not a positive preventive of trouble in labor, because no man can tell whether slight infection will follow an abdominal operation in the extensive adhesions. In one of Kelly's cases in this city that trouble did follow, causing difficult labor, although it did not cost the woman her life. The cause of the difficulty in labor was suppuration in the wound after the hysterorrhaphy. In any of the cases operated on by Dr. Ashton infection might take place and a broad surface of adhesions form instead of a slight one.

I have myself for several years used the Alexander operation for movable retrodisplacements and my experience with it has been most happy. There is no insuperable difficulty in defining the ligaments. In general they are easily found, the operation is simple and the patients have not only made good primary recoveries but the subsequent results are good. I have done about a hundred suspensions and fixations of the uterus and had perhaps fifty round ligament operations. The results in my hands have been distinctly better in round ligament operations than by suspension. The risk, while very small in either case, is distinctly less in the round ligament operation. Personally, I have practically given up the suspension operation in women who are liable to bear children. The exception is in procidentia, where I think the patient had better take the chance of labor than to go through the world with uncured procidentia. There are some cases of procidentia which cannot be cured without pretty firm fixation of the uterus in addition to the proper plastic vaginal work.

Like Dr. McKelway I would also suggest that the technique of the operation could be improved by the substitution of tier sutures for the through-and-through sutures, as I am quite certain that about 5 per cent. of hernias will follow this method of closing the abdominal wound. I would not, however, endorse Dr. McKelway's suggestion that some of the abdominal muscle be included; I have tried all the different methods of sustaining the uterus and I think the technique of Kelly certainly possesses the best features. If I should change it it would be to that of Olshausen in which he attaches the insertions of the round ligaments to the abdominal wall.

Dr. W. EASTERLY ASHTON: I waited one year before resorting to operative measures in recent retrodisplacements because my experience leads me to believe that it is a conservative method. A woman with a recent displacement does better to wait one year, because she can often be cured without operation. I did not refer to the Alexander operation in my paper because I do not believe in it. That is my personal opinion. I only use the peritonæum for the attachment of the fixation suture because I believe if we attach the sutures to the muscle, we are bound to have more or less pulling apart of the fibres. In reference to the closing of the abdominal wall, I am aware that Dr. McKelway and Dr. Noble employ the terrace suture. I do not use it myself. I believe I get the best results from the through-and-through suture. I have had my experience with the terrace suture and I was forced to give it up, along with a

number of other men. Dr. Noble's results, he tells us, are good with the suture which is no doubt the reason he employs it; personally, I get the best results with the through-and-through suture.

Two Cases of Abdominal Section for Tumors having Twisted Pedicles.

Dr. CHARLES P. NOBLE: The following cases illustrate the consequences of torsion of the pedicle in intra-abdominal tumors:

The first case, Mrs. W., consulted me in May, 1897. She had a procidentia and a small mass to the left of the uterus. I was in some doubt as to whether it was a small tumor or an enlarged ovary. Circumstances prevented operation at that time, and she consulted me again September 10, when there was no doubt that she had a small tumor, which was freely movable. Operation for the removal of the tumor and the procidentia was advised. October 4 she was taken with severe pain, accompanied by slight fever. The pain was so violent as to require the use of large doses of morphia and her general condition gradually became worse. There was a history also of several attacks of slight pain at intervals during the summer. I saw her October 8, late in the day. The pulse had ranged below 100 until my visit, when it was 120, and her temperature had been at or about 100°. I suspected torsion of the pedicle and advised immediate operation. October 9 the tumor was removed and proved to be a parovarian cyst with a twisted pedicle. The tumor and pedicle were dark and congested but not necrotic. There was considerable free fluid in the pelvis but no inflammatory lymph. Believing there was no septic peritonitis, I washed out the pelvis with salt solution and closed the abdominal wound without drainage. At the time of operation the temperature was 102° and the pulse 160. The patient steadily improved and made a good recovery.

This case is an illustration of one of the evils of delay in removal of intra-abdominal tumors. A more innocent tumor than a simple parovarian cyst cannot be conceived, and yet, through the existence of torsion of its pedicle, it would undoubtedly have caused the death of the patient had it not been promptly removed.

The second case, Miss R., consulted me September 14, 1897. She gave a history of general good health and of local trouble dating back for three years. Menstruation had always been regular and scanty, with a duration of two days—recently one day—with but little pain until the past year, when she had much pain before

menstruating. For the past three years there has been a blood-stained discharge between her periods. She complained of what she called "her attacks," which she had had for three years, occurring about every six months and lasting from one to three days with severe pelvic pain without fever. The last attack was more severe and accompanied by slight fever and tympany. Examination showed a hard tumor in the pelvis apparently connected with a tumor which filled up the left half of the abdomen below the umbilicus. The abdominal tumor was slightly fluctuating. Owing to the fixity of the abdominal tumor, a probable diagnosis of inflamed dermoid or malignant ovarian tumor was made. She was operated upon October 21. The abdominal tumor proved to be an ovarian cyst with twisted pedicle universally adherent; and the pelvic tumor, multiple fibroids. A hysterectomy was performed and the patient has made an uncomplicated recovery.

The two cases well illustrate the difference in the result of an acute strangulation of the tumor by a twist in its pedicle as contrasted with the gradual cutting off of the circulation, inflammation in the tumor, and the formation of a new blood supply to the tumor, and the formation of a new blood supply to the tumor through the adhesions. The symptoms were so moderate in the second case, that the probability of torsion of the pedicle did not occur to me before the operation.

Abdominal Section for Pyosalpinx and Intra-Abdominal Abscess.

Dr. CHARLES P. NOBLE: The following case is reported as an illustration of the favorable influence of the transfusion or subcutaneous injection of salt solution in conditions of shock or profound prostration and also because of its bearing upon the question of drainage of the peritonæal cavity after abdominal section.

Mrs. B. consulted me March 9, 1897. Her age was thirty-one. She was a large and fat woman, weighing two hundred and ten pounds. Her personal and menstrual history was negative until some five years ago, when a suspicious vaginal discharge was present. For the past five years menstruation has lasted ten days instead of its normal period, and during this time there has been an abundant yellow leucorrhœa. She has had one supposed miscarriage at the sixth week. For two years past she has had attacks of pelvic peritonitis. Two years ago she was in bed seven weeks and an abscess discharged through the rectum following a pelvic

examination. This ceased to discharge after two weeks and subsequently closed up. She has had numerous inflammatory attacks of a few days' duration and was in bed during February, 1897.

A pelvic examination demonstrated a vaginitis and the vagina and uterus of a nullipara. The pelvis was choked with a hard tumor of irregular outline, situated more especially to the left and front of the uterus. A diagnosis of probable fibroid and pus tube, with extensive pelvic exudate, was made. Operation was advised, but the patient was told it would be one of more than average severity and gravity. The patient was admitted to the Kensington Hospital for Women on March 29 and operated upon April 5, operation having been delayed on account of bronchitis. The operation proved to be one of the most difficult and the most tedious I have ever done, occupying almost three hours. The difficulties of the operation were due to the thick abdominal walls of the patient and the very extensive and dense adhesions and exudate in the pelvis. The duration of the operation was greatly prolonged because of the numerous bowel adhesions and because almost all adherent surfaces, when separated, obstinately oozed. The tumor in front of the uterus proved to be an abscess on top of the bladder, walled in by masses of exudate and the omentum and not a fibroid tumor. Owing to the length of time taken in separating the bowel adhesions, the appendages only were removed instead of a hysterectomy being done. Before the completion of the operation, as was to be expected, the patient became profoundly shocked. This was largely due to the duration of the operation and to the traumatism inflicted within the abdominal cavity but partly to loss of blood. The pulse was at least 150, and could scarcely be counted at the wrist. The operation was completed by washing out the pelvis with salt solution, leaving thirty-two ounces in the abdominal cavity; no drainage. An additional pint of salt solution was put under the breasts and another pint with two ounces of whisky was injected into the rectum. It is unnecessary to say that full doses of digitalis, strychnine and caffeine were used hypodermically and whisky was freely given by the bowel until the patient's condition finally improved. These agents, however, had little apparent influence in improving the pulse, which was always improved by the use of salt solution, which was used in the following amounts: daily twenty-four ounces of salt solution and eight ounces of whisky were given by rectal enemata; at times some of this was rejected. On the day following the operation, at 3 P. M. the pulse was 160, the patient restless and extremely weak. Thirty-

two ounces of salt solution was introduced into a vein, which brought the pulse down to 150 and greatly increased its strength. At 9 P. M. forty ounces were introduced under the breasts. The following day forty ounces were given subcutaneously in the thigh in the morning and in the evening forty-eight ounces in the opposite thigh. The following day thirty-six ounces were introduced in the scapular region. The patient then substantially improved, and the use of salt solution was discontinued. Thus on four different days, and really within seventy-two hours, about three hundred and forty ounces of salt solution were introduced, and, aside from that lost from the bowel, must have entered the circulation of the patient. I have no doubt the patient owes her life to the action of the salt solution in assisting the circulation.

Her improvement continued from the 7th of April until the 18th, although at no time had her condition been entirely satisfactory. At this time the temperature began to ascend and she had violent pain in the abdomen and a chill. The septic condition continued until the 27th, when a discharge of pus and fæcal matter took place through the abdominal wound. The probable explanation is that a point of bowel which was detached during the operation gave way about the 18th, resulting in an intra-peritonæal abscess. The discharge must have come from high up in the small intestine, as the character of the discharge was distinctly biliary and there was very little fæcal matter present. The abdominal wound broke down at two points, which communicated within the abdominal cavity. When the patient was discharged from the hospital on the 3d of June, about two months after the operation, the fistule had contracted down to the size of a "pin's head" and shortly afterward closed.

In September last the patient expressed herself as feeling entirely well and is now doing her housework. On examination, slight infiltration of the left broad ligament was found but otherwise the parts were in good condition and free from pain.

A curious point in connection with the case was from the standpoint of buried silkworm-gut sutures. The abdominal wound was closed with buried silkworm-gut sutures, and, when the wound broke down, I presumed these would be discharged, as has been my experience heretofore. Curiously the wound healed without discharging these sutures and none have since become infected.

I feel the case is worthy of report: First, as showing the influence of large amounts of salt solution under desperate circumstances and

also the quantity which can be added to the circulation without injuriously diluting the blood; secondly, as illustrating recovery without drainage in a case which would be selected as a typical example for the use of drainage. Not only was the pelvic abscess opened during the operation but the walls of the abscess, being the bladder, could not be removed. The subsequent occurrence of fæcal fistule could not have been influenced by drainage of the pelvis, as undoubtedly it did not occur until about twelve or thirteen days after the operation.

DISCUSSION.

Dr. L. J. HAMMOND: Has Dr. Noble had any experience with normal salt solution in affecting a person by over-dilution of the blood? My idea was that it really mattered very little whether the salt solution was in excess of the blood; it was rather quantity than specific action that did the good. That is to say, it gives the heart something to act upon, thereby avoiding collapse.

Dr. CHARLES P. NOBLE: I don't know of any experiments which have been made as to the amount of salt solution which can be introduced without injuriously affecting a human being. One would suppose there would be a limit to dilution, but so far as my own experience goes I have never used so much salt solution as in this case. I have never had any reason to believe it did any harm. The only untoward result of which I am cognizant was in a patient with chronic phthisis, with broncho-pneumonia lighting up. I gave salt solution to stimulate her and she had a very severe rigor after the salt solution was introduced into the vein. Whether in that case the rigor was due to transfusion it is difficult to say. Otherwise I have only noted good effects. I quite agree that the value of the solution is in giving the heart something to pump against.

Rupture of the Puerperal Uterus and Injury of the Intestine with the Curette.

Dr. Charles P. Noble presented also a specimen consisting of three feet of the small intestine. He said:

I have here three feet of the small intestine which I removed recently under these circumstances: A very competent physician was curetting the pregnant uterus for an incomplete abortion when he found he had the small bowel in the vagina. He sent for me to repair the injury. Similar accidents to this have been reported. I

remember some time ago Dr. Mann, of Buffalo, reported several cases in which, in curetting the uterus, the small bowel had been pulled down. In one case quite a number of feet were pulled down and the attending physician very unwisely cut off what he had pulled down before he sent for Dr. Mann. In that case there was a question of rupture of the uterus and a question of fæcal extravasation. In this case the doctor had already emptied the uterus, he carefully washed the bowel and pushed it up into the uterus. I opened the abdomen and found a small rent in the fundus half an inch long. The bowel had replaced itself in the abdominal cavity. It was not lying inside the uterus. After sewing up the hole in the uterus and sponging out perhaps half a pint of blood these three feet of small intestine were found entirely detached from the mesentery. I made a resection with Murphy's button. The last report at the end of two weeks was that she was doing very well. The only thing I have to say about this case is that it shows the wisdom, in my judgment, of using the fingers to empty the pregnant uterus. In my own work in attending abortion cases, if occasion to remove placenta occurred I have always done so with my finger or fingers and I am quite satisfied that the fingers are all sufficient to remove the placenta in these cases. Not only are they all sufficient but they constitute the only safe instrument. It is sometimes objected that the fingers are not long enought to reach the fundus, but the fundus can be pressed down upon the fingers when the half hand is in the vagina. Of course anæsthesia is necessary. If septic conditions are present I have curetted the uterus with a broad curette after removing the placenta; but aside from this occasional use of the curette I think it should not be employed in the treatment of abortion.

Official Transactions.

FRANK W. TALLEY, *Secretary.*

THE TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, November 9, 1897.

The *President*, W. GILL WYLIE, M.D., in the Chair.

Dr. W. GILL WYLIE: I wish to thank the members of the Society for the honor they have conferred upon me in electing me their President. It came to me as an agreeable and unexpected surprise, because I realize that I am not popular on account of my frankness in speaking of scientific matters. I will endeavor to help the Society in every way, and trust you will overlook my faults as a presiding officer with whose duties I am not familiar. I will try to respect the feelings and opinions of all the members, although I will be frank in criticism and in regulating discussions, and hope I will not be misunderstood.

As we are now to have but one meeting each month, an effort should be made to induce the members to attend. I think this can be done if we all work together. My first duty will be to call together some of the older Fellows and ask them to attend the meetings. The actual practical work of the Society has changed much of late years. I do not like to say that it has run down, but it certainly has quieted down to a marked degree. I think this is largely due to the fact that gynæcology has become so popular that it has been taken up by general surgeons all over the country, and it is no longer so closely followed as a distinct specialty as is laryngology, for example.

Early Pregnancy and Labor.

Dr. SIMON MARX: I would like to report a very interesting case of early pregnancy which recently came under my observation, occurring in a girl fourteen years and six months old, who had been married about nine months. During her pregnancy she had but little trouble, except toward the last, when albuminuria and general systemic poisoning developed. When I first saw the patient she had had forty-eight hours of fruitless labor on account of inefficient pains, and she presented a picture which was truly pitiable.

She was nothing but a child, with undeveloped mammæ, *mons veneris* devoid of hair, and the pelvic contour typically infantile. The indication for interference was eclampsia and lack of muscular strength to complete labor. The head was just at the brim and the os admitted little more than the two fingers. This was dilated manually, the membranes ruptured, and axis traction applied. All went well until the head entered the inferior strait, when, owing to the fact that the patient had the pelvic configuration of a child, the axis took a different direction from that which is normally the case. Taking off the traction rods, I made rotary traction directly downward and forward and then directly forward and upward, and in that way delivered a baby weighing less than six pounds. Of course, on account of the weakness of the muscular fibers of the pelvic floor, the perinæum immediately tore. I allowed her to bleed freely, in order to relieve the enormous arterial tension, and then closed the tear. Rotary traction by axis traction forceps, *i. e.*, rotating the head while pulling down, acts very well in these cases. The mechanism of labor in infantile women must, of necessity, differ from that of a mature woman.

Shortening the Round Ligaments.

Dr. J. RIDDLE GOFFE: I would like to say a few words about the operation for shortening the round ligaments through the anterior vaginal fornix, which I still continue to perform. I find that the more experience I have the simpler and the more satisfactory the operation becomes. Two weeks ago I operated after this method upon a woman with a retroflexed uterus, in whom the ovary and tube on the left side were diseased and bound down. The exact condition of the appendages on the right side was not so apparent before operation. After opening the anterior vaginal fornix and breaking up the adhesions, the left tube and ovary were delivered into the vagina and removed, for the tube was filled with pus and the ovary very much enlarged and cystic. On the right side, I found a club-shaped tube but a comparatively healthy ovary, which I considered could be saved by restoring it to its normal position. I therefore left it and treated the tube by cutting off the club end, turning in the mucous membrane lining it, and attaching the stump to the ovary. The round ligaments were then shortened through the vaginal incision, after the usual method. The patient was only twenty-four years of age, married three years, and had never been

pregnant. The vagina was rather narrow, and the operation was perhaps as difficult as it could be in such a case, yet I find that conservative work of this kind can be done through the vaginal incision even in the face of these difficulties. I speak of the case simply to illustrate what facility can be acquired in doing this work. The patient has made a good recovery. Upon examining her on Saturday I found the uterus in good position and the tube and ovary on the right side perfectly movable. I therefore hope for the best results from the operative procedure.

Discussion.

Dr. Jewett: I would like to ask Dr. Goffe if he has operated by this method in ectopic gestation?

Dr. Goffe: I have not had occasion to operate upon a case of that kind since I began this vaginal work. While I have had considerable experience in working through the anterior incision, the operation does not commend itself to me as a method of attacking a gestation sac. As a rule, these sacs drop down posterior to the broad ligament. Naturally, it would be easier to reach them through a posterior incision.

The President: I would like to ask Dr. Goffe whether he would employ the anterior incision in pus cases in which drainage is required.

Dr. Goffe: In cases where I have found this necessary, I have opened into Douglas's pouch in order to get good drainage.

Dr. H. N. Vineberg: I am very gratified to hear of Dr. Goffe's work, for I am perhaps the only member of this Society who has been fighting for this method of operating. The only difficulty in doing conservative work in this way is in delivering the tube and ovary. But the results of this work compare favorably with that done through an abdominal incision. Of course, the operation is not always successful in its permanent results, but this is not necessarily due to the method employed; it is because we are still in the infant stage of conservative work.

The great objection against attacking an extra-uterine gestation by this route is the fact that the uterus is rather soft and friable, and there is danger of lacerating it in delivering it through the vaginal incision. I have seen this same condition of the uterus four or five months after labor. Dührssen has recently reported nineteen cases of ectopic gestation operated upon through an anterior vaginal in-

cision, and makes a strong claim in favor of it. Although I myself am partial to the vaginal route for other conditions, his results do not appeal to me because in several of the cases he lacerated the uterus and then had to sew it up with catgut. This is objectionable for the reason that it is likely to cause difficulty in following pregnancies.

In regard to shortening the round ligaments through the vaginal incision, I would like to mention an experience which I recently had with an incision in the posterior fornix of the vagina for the removal of a solid tumor of the ovary. The patient made an afebrile recovery and the vaginal wound healed by primary union. Later on I was very much astonished to find the uterus in retroversion almost to the third degree, though prior to operation it had been in good forward position. I would like to know if any Fellow has met with a similar result after posterior vaginal section. I did not close the peritonæal wound separately, and the drawing back of the uterus may have been due to this circumstance.

Dr. H. T. HANKS: In regard to operating through the vagina in ectopic gestation, I have had some experience in this direction, and am convinced that we ought to operate by this method with safety *only* when the tube is unruptured. I have attempted the operation in three cases in which rupture had taken place and have found that it is a difficult matter to find the bleeding vessel with the blood flowing freely. I shall never try it again. If the case is seen within the first five or six weeks, before rupture has occurred, it is very simple and very safe to operate through the vagina. Otherwise, unless you are an expert, it is best to operate from above. In one of my cases there was an adherent appendix; in another the bulging of the vagina was on the side opposite that where gestation took place; in the third, the tube had dissected its way down, and the bleeding point was very far from where it seemed to be. In each of these cases the operation was completed from above, and each patient fully recovered.

Dr. JOSEPH BRETTAUER: I am interested in the remarks made by Dr. Goffe in regard to shortening the round ligaments through the vagina. A little more than a year ago I saw Dr. Wertheim in Vienna do this operation, and was struck with the ease with which it was done. I made up my mind to try the operation as soon as a suitable case presented, and since then I have employed it three times. In the first case the operation proved to be very easy; more so than Alexander's or ventro-fixation, and I also did plastic oper-

ations on the anterior and posterior vaginal wall and sent the patient home with the uterus in good position. Four months later the uterus was more retroflexed than it was before the operation. In the second case there was a recurrence within six weeks—before the patient left the hospital. The uterus is still anteflexed in the third case, which was operated upon about nine weeks ago. I agree with Dr. Goffe that the operation is easy and feasible, but my experience is contrary to his in regard to results. Vaginal operations for conditions in which we formerly did abdominal work exclusively have now become the rage. I have employed the vaginal route in a number of cases and have removed dermoid cysts as large as my fist and an ovarian abscess which contained four or five ounces of pus by anterior section with perfect ease. I have also removed an ectopic gestation sac, unruptured, by posterior section, and do not see why it should not be as easily done through the anterior incision if the sac lies well in front. Though I have become quite familiar with the technique, I do not like the vaginal operation, for I feel never sure that some complication will not develop within the first twenty-four hours. When I open the abdomen and tie off the vessels carefully and separate adhesions in view, I always feel safe, even when appendages in a purulent condition have been removed. I prefer the abdominal route for all such work, and feel to-day as if I would in future attack by vaginal section only such conditions where the parts to be removed are low down in the peritonæal folds either anteriorly or posteriorly to the uterus.

The PRESIDENT: This subject seems to be a very interesting one, and it might be well to have it up some evening for general discussion.

Dr. VINEBERG: I wish to say that I have never done shortening of the round ligaments by the vaginal method, but the operation that I devised and am doing at the present time consists in *attaching* the round ligaments to the vaginal wall. I have done fixation of the uterus in this way in twenty-five cases with good results. I do not think that simple shortening of the ligaments is enough to hold the uterus in position. That was my criticism of Wertheim's method when he first published it. I am, therefore, not surprised to hear of Dr. Brettauer's results.

Delay in the First Stage or Protracted Labor.

By J. Lee Morrill, M.D.

(See page 35.)

Discussion.

Dr. Hanks: I thank the President for calling upon me, although I think that some of the professors of obstetrics who are present are better able to open the discussion than myself. However, during the last twenty years I have learned much which has helped me in my cases of difficult labor, and I am glad to be able to say something on the subject. The paper is a very comprehensive one and the points brought out are suggestive but too numerous to encourage me to speak at length. The greatest difficulty I meet with in my consultation cases is that of trying to teach the men whom I am endeavoring to assist to make a diagnosis of the cause of the delay before sending for council. It seems to me that our professors of obstetrics should lay more emphasis on teaching men how to make out the position of the head, and, particularly, to find out if the case is unusual in any way. To illustrate this, I was called by a distinguished surgeon one night at eleven o'clock to see a patient suffering from puerperal uræmic convulsions who had been in labor during the previous fourteen hours. A prominent obstetrician had already been called in who advised the use of Barnes' bags, which were employed with no effect. The os was less in size than a quarter of a dollar. It was exceedingly tough and inelastic; the patient was comatose and had had several convulsions. I advised the surgeon to at once use his scissors to slit the tough cervix. This he did, and the fingers and hand introduced and dead child turned and delivered at once. The principal thing in delayed labor is to find out *why* the head does not come down.

In regard to delayed labor from ineffectual pains, I think we must sometimes resort to an anodyne in order that the patient may get a few hours of rest. Then begin with your quinine, your whisky, or your nitroglycerine, and assist your patient by propulsion, etc. Find out *what* the *trouble* is and obviate it. Put the patient in the knee-chest position and let the head recede after several contractions, and you will often find that labor will go on all right when

she returns to the supine posture. Again, often the third and fourth positions are changed to first and second positions by posture treatment, combined with gentle external manipulation.

Dr. JEWETT: I am glad to hear so much stress laid on the introduction of the hand into the uterus for diagnosis. Conditions which are otherwise obscure thus become perfectly plain. Sometimes it is the only means of diagnosis. The woman should be under an anæsthetic. I do not think that mere rigidity of the cervix should be looked upon as an important factor in delayed labor. The cause of an unyielding cervix lies more in the upper uterine segment than in the cervix. There is no such thing as anatomical rigidity with good and vigorous pains. The treatment of rigid cervix should be addressed to the uterine contractions. Opium or chloral will frequently regulate the pains. Or these drugs may be given in doses sufficient to put the patient to sleep. After the nervous system is restored by a few hours' rest the labor is often ended rapidly.

A full bladder or rectum can scarcely be an important cause of mechanical obstruction. They act almost solely by their reflex effect.

I do not look upon obliquity of the uterus as a cause of delay in the first stage. That is a matter which concerns expulsion more than dilatation. I see no reason why it should materially disturb the mechanism by which the cervix is pulled up over the lower pole of the fœtus. Nor does it seem to me that a short cord can affect the progress of the first stage.

Delay in dry labors may be overcome by the hand. Manual dilatation is especially satisfactory when considerable dilatation is already established. When the cervix is very rigid and but little dilated, if time permits, the dilating water-bags are preferable for the reason that the pressure is more equable and less traumatism therefore is inflicted.

Dr. EGBERT H. GRANDIN: The paper is so encyclopædic in character that there does not seem very much left to say. I am glad, however, to assume, from the remarks of Dr. Hanks and Dr. Jewett, that modern ideas have entered into the practice of obstetrics. I was also glad to hear Dr. Hanks refer to the absolute necessity of making a diagnosis and lay stress upon the fact that there is only one way to make this diagnosis, *i. e.*, to insert the hand in the vagina and find out the exact cause of the delay before trying any method of assisting labor.

A very common cause of tedious labor is the malposition of the fœtus known as occiput posterior, and this, in my experience, is a condition which occurs far more frequently than is generally recognized. The character of the pains will often tell us that there is an occiput posterior, and nagging pains, which indicate that there is no descent of the head, should always excite the suspicion of the accoucheur. An examination should then be made and labor ended by dilatation and rectification of the position of the fœtus or by doing elective version. Possibly those who follow us will be able to deliver women by making labor an elective operation. Perhaps fifty years from now the Utopian period will come when it will be considered barbarous to allow a woman to suffer ten, twelve, or eighteen hours because Mother Eve ate the apple or because we are afraid to interfere. It won't come right away, but the day will come when men will not let women linger in labor even as we do now.

However, as that time has not yet come, the most important point in delayed labor is to make an accurate diagnosis. We now know that we can do a great deal without hurting the woman or the fœtus, and we can often save the life of the latter where otherwise it would be lost.

In regard to uterine inertia, due to an undilated os, the author has advised the use of a catheter. I think we had better forget how to use a catheter in the pregnant uterus. So long as we have the hand, we need no catheter where the condition of the uterus is such that it requires stimulation. If quinine by rectum does not help us, the best thing to do is to anæsthetize the patient and dilate the os with the hand. This can be done without hurting the uterus and will save the woman much suffering and sometimes the life of the child.

In regard to Barnes' bags, I once owned a set, and when the time came to use them they were rotten and I had to throw them away. What do you want of them, anyhow? If the hand is properly used, it will not injure the cervix or the uterus, and in 98 per cent. of the cases it will dilate more easily and more quickly than Barnes' bags. They and the modification devised by Dr. McLean should be relegated to the past.

In cases where tumors of a fluid character interfere with delivery by blocking the canal, the author says he would puncture them. I would never do that. I would do an abdominal section, remove the tumor and at term dilate the cervix and deliver. If we follow his advice, we will have delivered the fœtus and left an infec-

tious sac in the pelvic cavity. The risk of abdominal section is to-day so small, that we should not hesitate to undertake it.

Dr. MALCOLM MCLEAN: I am very glad to hear Dr. Grandin make this open statement, for I think it needs a little modifying. I agree so nearly with what he says that I take care to emphasize this. In the first place, he speaks of a sort of Utopian period when women will be delivered by elective accouchement and Nature will be replaced by operation. Now, I think that if Dr. Grandin would give that teaching in connection with Dr. Hanks' remarks, a good point would be held in place. But I should not like this teaching to go forth from this Society. I should not like Dr. Grandin's advice to reach the obstetrician even fifty years hence. My experience is that most of the men we meet nowadays are trying to force this fifty-years improvement on us now without waiting to make a diagnosis—in fact, are trying to do without a diagnosis, and thereby often force a dangerous operation. In the transition from the non-parturient to the parturient condition, there is a change which is almost a metamorphosis. Tissues which were firm a few hours before become soft and admit of easy distension. I want this change to be allowed to take place, and I am sure that in practical work Dr. Grandin agrees with me in this.

In regard to Barnes' bags, I am not willing that they be relegated to the past. In many cases I find them very useful. If the only objection to them is that they rot, this can be overcome by buying only those which are made of good rubber. I have never had any trouble of that kind. *Use* of the instrument preserves its integrity.

Delay in the first stage is often due, not only to a faulty position of the fœtus, but to faulty uterine contractions. I have seen many cases in which the only difficulty lay in the lack of rhythm of the contractions. Rectification of the faulty position leaves the case still in trouble; there is no obstruction, but dilatation has stopped. In such a case it would be brutal to let the woman go on unaided. Now is the time for Dr. Grandin's elective operation. But I do not throw away my Barnes' bags—I use them and they answer the purpose; they imitate Nature.

There are some cases, as the author said in the paper, in which the bag of waters is so spread out across the os that it does not come down. In such a case the membranes should be ruptured.

Dr. MARX: I believe that the Utopian period has arrived. I know an accoucheur in New York who appoints a time to deliver

his cases and when that time comes he goes to the house with his assistants and delivers the woman. I think this is decidedly unnatural.

My experience with Barnes' bags is like that of Dr. Grandin, except that I have had three sets and all have rotted and died an early death. I never used them but once, and they simply slipped through the cervix and dilated the vagina. Meanwhile, time was lost and other means of dilating the os had to be employed. The hand is better than any instrument for this purpose. I will admit that at times the cervix is torn during manual dilatation, but if this occurs the tear can be closed immediately.

Delay in the first stage in the cases which I have seen has been largely due to contraction of the pelvis or to an occiput posterior position. The latter is of frequent occurrence, and is rarely recognized. When difficulty arises in a multipara in whom previous labors have been short and easy, the hand should be introduced into the uterus in order to make a diagnosis. If a faulty position be found, a rotary version may be done, or, if neccssary, a foot may be grasped and podalic version performed. It will generally be found that an occiput posterior means either a large child or a small pelvis, and these conditions can be overcome only by doing a version.

The author speaks of multiple superficial incision, followed by the use of Barnes' bags. This has been tried and tears resulted. Why not go a step further and make a posterior incision? If the vaginal portion of the cervix is drawn up, the contraction is below the vaginal junction and the cervix should be incised. I have just reported fifty cases in which all the children but one were delivered alive by the hand. Why use instruments which are uncertain when such good results can be obtained by manual delivery?

Dr. E. A. TUCKER: When Dr. Grandin spoke of the elective delivery of normal cases, I thought he meant it as a joke, but when Dr. Marx told of men who make an appointment to deliver, just as they would appoint a time for an operation, I think it is carrying a joke too far. Such teaching as this I consider most pernicious. I cannot too strongly express my opposition to such procedures. Normal labor is just as physiological as breathing, or digesting, and to go to a patient with the deliberate intention of bringing on labor in a normal case is just as much of an extreme as it is to let a woman suffer for days undelivered. I recently saw an instance of the latter, where the attending physician said the woman was having false

pains. Nothing was done for seven days, and, of course, the woman died.

In regard to posterior position as a frequent cause of delay in the first stage, I agree with Dr. Grandin, but I do not think that it needs the rectification which he proposes. Dr. Marx suggests version, but I have seen hundreds of such cases in which labor has terminated without such measures.

The author speaks of making incisions with a knife in cases of atresia of the cervix. I have seen several cases in which the cervix became occluded after pregnancy had taken place, but I have been able to force my finger through the canal by a boring motion without any cutting operation.

The author also refers to tough membranes as a cause of delay in the first stage. There are very few cases in which the membranes can withstand the pressure of good, strong labor pains. Deficient pains are the real cause of the delay in most cases. I never saw a case in which tough membranes impeded the first stage of labor, nor have I ever seen a case of short cord in which any of the measures advocated by the author were necessary. The cord will usually break or the placenta will become detached, or the cord will be pulled out of the placenta long before the uterus will invert. In some cases it may be best to pass the hand into the uterus and break the cord, or tear it loose from the placenta.

In regard to manual dilatation, the author did not suggest this as a means of starting up uterine contractions, although it is one of the best methods of accomplishing this. I never use Barnes' bags. The hand is indicated in these cases.

Dr. GOFFE: I think it would be of practical interest to hear from Dr. McLean how he sterilizes Barnes' bags and how he keeps them ready for use and prevents their rotting.

Dr. MCLEAN: Their sterilization is a simple matter, for it can be done with sulphuric acid, even if the rubber is pure. I also put them through bichloride of mercury after the cleansing process by hot water. They are as easy to keep clean as any instrument. As to the life of the bags, it is the use of rubber which preserves it. If you do not use them often have your nurse blow them up once in a while. If they are used frequently, they will always be ready. Ordinary rubber drainage tubes, if unused, will become brittle and break; it is the same with Barnes' bags.

Dr. JEWETT: Rubber instruments can be repeatedly boiled or

sterilized with steam with very little injury. They can easily be made aseptic which is not true of the hand.

The PRESIDENT: I have taken some interest in obstetrics, and, although I cannot say that I agree with Dr. Grandin in regard to his Utopian way of treating labor cases, I think a serious mistake is made when one speaks of parturition as a process which is as normal and physiological as breathing. As a result of civilization, labor in many women is apt to be abnormal, and there are some who are so imperfectly developed that they art unfit for childbearing.

Physicians, too, make the mistake of not watching these cases, and often do not see the patient in time to make a diagnosis of disproportion in the size of the head and that of the pelvis. They should be carefully examined in order that it may be determined that no abnormality exists. In some cases of delayed labor, it will be found that the cervix is drawn up, and this condition may last for weeks in some women. By stimulating such cases in a mild way, labor can often be brought on within a week or ten days, and it will be so nearly normal that there is no appreciable difference.

Dr. MORRILL: Dr. Jewett has expressed the opinion that obliquity of the uterus can hardly delay the first stage of labor. I have certainly seen cases in which the progress of the first stage was delayed by a pendulous abdomen, and in such cases labor will often go on when the patient is placed on her back.

In regard to Dr. Grandin's remark about the use of the catheter, I do not see any objection to stimulating a lazy uterus with a sterile catheter. I have also used Barnes' bags frequently and with good effect.

In speaking of the treatment of fluid tumors which obstruct labor, I said I excluded such tumors as could be removed by abdominal section. The point which I wished to make is that in many cases such tumors obstructing labor can be evacuated from below by men who are not capable of attempting an abdominal section. Of course, where a man is skilled in abdominal work an abdominal section might be done.

In regard to incision of the os, I did not say "superficial;" I said "multiple" incision.

Now as to tough membranes, Dr. Tucker says he has never met with such a case. In the paper I mentioned one in which the woman was in labor for twenty-four hours without rupture of the membranes, and I have seen a case where the child was born half-

way with the membranes unruptured, so I have reason to think that tough membranes do exist.

So far as a too short cord is concerned, this is undoubtedly a rare condition. I would like to ask Dr. Tucker if he has ever tried to break a cord *in utero*. I should imagine that it is not an easy thing to do.

Dr. TUCKER: I have done it. However, it generally pulls out of the placenta.

Official Transactions.

LEROY BROUN, *Secretary.*

ABSTRACTS.*

This Department is in Charge of the Following Staff of Sub-Editors:

DR. T. W. CLEAVELAND, DR. G. H. MALLETT, DR. A. D. CHAFFEE AND DR. W. T. KLEIN.

THE STATUS OF GYNÆCOLOGY ABROAD.

BELGIUM.

Ovarian Therapeutics.

DR. JACOBS (*Semaine Gynecologique*, June 22, 1897), although skeptical at the beginning of his observations, had confidence enough in the remedy to continue its use. The extract of the ovaries of recently killed animals were used. The use of the remedy is based upon Brown-Sequard's theory that each gland of the organism provided or not with an excretory duct, secretes a liquid which enters the blood, and the insufficiency or change in the character of the secretions must induce an abnormal condition in the organism. The application of this theory has given very favorable results with the use of the thyroid body. These successes have caused the author to try the administration of the extract of ovaries in the cases where the symptoms indicated insufficiency or a change in the secretions of the ovary. Other physicians have attained results that agree with those of the author. Among them may be mentioned those cases reported by Dr. Comberbach, of Brussels. One was a young girl, fifteen and a half years of age. She had begun to menstruate one and a half years previous. One year ago she became gloomy in disposition, and three months ago she began to be hysterical and melancholic. Having exhausted all the usual remedies without success, she was given oöphorin wine, which contains about 20 c.c. fluid extract of ovary. This is an ordinary dose. She has now taken five bottles of the medicine and for two months her symptoms have disappeared.

The same author cites a case of amenorrhœa in a woman of nineteen years of age, who menstruated regularly after taking oöphorin for two months.

Dr. Bustin reports the following case: A widow, fifty-eight years old, reached the menopause five years ago. After the cessation of menstruation she began to have attacks of vomiting. At first, three or four times per month, afterwards increasing in frequency, until they occurred three or four times a week. The vomited matter was bilious or aqueous, never alimentary. These attacks usually lasted for two days, during which time the patient had to remain in bed, and could not take any nourishment. The patient became much emaciated, and her condition became serious. She was given the oöphorin wine

* All Abstracts are made *directly* from original articles in the languages in which they were first published.—EDITOR.

(400 c.c. fl. extract) and immediately began to improve, and in a month the cure was complete. She was seen five months afterwards, and had remained perfectly well.

Dr. Stouffs, of Nevelles, reports two cases of chloro-anæmia with amenorrhœa, in which all symptoms of anæmia disappeared, and menstruation returned with the use of oöphorin; also a marked improvement in the case of a large fibroma uteri that was considered inoperable. Menorrhagia was also relieved by the same treatment in a young woman with a small fibroid.

The author's experience is based upon 150 cases, in about one half of which he was able to follow the results. Eighty-one of the latter he has classified as follows:

	Cases.	Failure.	Cures.
Genital atrophy, amenorrhœa	7	1	6
Neurosthenia	2	2	..
Dysmenorrhœa	10	1	9
Anæmia, amenorrhœa	8	..	8
Puerperal, amenorrhœa	4	..	4
Symptoms of menopause after operations	41	1	40
Symptoms of natural menopause	6	..	6

Suggestion plays a prominent part in some of these cases, but not in all.

In one case of obesity, with amenorrhœa, of nineteen months standing, after taking the extract of ovaries the obesity diminished and menstruation became regular.

In another case, twenty-two years of age, of undeveloped genitals, the patient had never menstruated. After taking the ovarian extract for a month menstruation appeared and has continued regular ever since.

All the painful symptoms of natural menopause improve rapidly and disappear with the administration of ovarian substance.

The author does not predict the value of this remedy in the future but considers it well worthy of a trial.

France.

Vulvar Thrombosis at the Sixth Month of Pregnancy: Cure.

Ch. Vinay (*Lyon Medical*, September 26, 1897), reports the case of a woman, twenty years of age, a victim of grand mal, who, in the sixth month of her pregnancy, became subject to an attack, during which she fell heavily forward upon a chair. Upon regaining consciousness, she complained of an intense pain on the left side of the vulva, which, upon local examination, was found to be a thrombus about the size of a fist, involving both the greater and lesser labia of the left side. She was put to bed and a hot solution of bichloride, 1 to 100, was applied on a compress. Two days later the surface of the tumor began to ulcerate and, fearing suppuration the author made an incision, turned out the clots, drained, and so brought about an early cure. There was not at any time an elevation of temperature, and the pregnancy pursued an uneventful course to its natural termination.

Total Abdominal Hysterectomy for Tumors of the Uterus.

A. Monprofit (*Journal de Med. de Bordeaux*, October 31, 1897), says that abdominal hysterectomy has become the operation of choice for large fibroid

tumors, claiming that the results had become so satisfactory that the gravity of the procedure was hardly greater than that of a simple ablation of the appendages. He employs it also for fibroids of medium or even small size, which he had heretofore treated by vaginal section.

The operation appears to him much easier of accomplishment and more certain in its hæmostasis. Besides, it is often possible to preserve the uterus and appendages in many cases of subperitoneal myomata, or pediculated tumors, which could not have been diagnosticated with certainty except by abdominal section. The vaginal route offers far greater difficulties when we operate with the same end in view.

He employs the abdominal operation for the removal of malignant tumors of the body, and even of the cervix in certain cases. If the epithelioma has completely destroyed the neck of the uterus, abdominal intervention is infinitely easier, more rapid and more certain than the vaginal. He adds that if the case is one of malignant tumor of the body of the uterus with marked increase of the size of the organ, the vaginal operation should not be considered at all. For, by this route, the ablation can be accomplished only by morcellement. Now such a procedure, besides the risks of inoculation, which accompany it, offers the greatest difficulties in the apprehension and removal of the friable particles which constantly evade the grasp of the forceps, and in the control of hæmorrhage.

In these cases he generally performs a combined vagino-abdominal operation. In one sitting he divides the vaginal cul-de-sacs and the base of the broad ligament after clamping the uterine arteries. In a second sitting he performs the abdominal section, divides the upper part of the broad ligament and the cul-de-sacs of the peritonæum and thus removes with the greatest ease a tumor which indiscreet traction by one or the other route alone would have torn to pieces.

Altogether, he thinks that the field of vaginal hysterectomy is gradually narrowing, while that of the abdominal operation is daily increasing.

The Appendix and the Female Generative Organs.

PICHEVIN (*Le Semaine Gynecologique*, November 16, 1897), says that Trent of Amsterdam, basing his opinion on the anatomical researches of Glado, advances the theory that appendicitis is a less serious affection in women than in men, on account of the free passage of the infectious products from the lymphatics of the appendix to those of the broad ligament, and that thus a parametritis is often produced, the origin of which could be traced to the appendix.

He then adds the description given by Glado of the *appendiculo-ovarian* ligament:

"The relation between the appendix vermiformis and the internal genital organs of the female has long since been recognized. It is known that the appendix can come in contact with the appendages of the uterus and contract adhesions with either ovary or tube.

"Upon lifting up the appendix there is formed a peritonæal fold, which is continuous with its meso, and passes forward to merge with the superior border of the broad ligament. This falciform band is the *appendiculo-ovarian* ligament. It is least elevated at its centre, where it crosses the iliac vessels and measures about 1 to 2 cm. in height. It is a fairly constant anatomical structure and per-

mits of a more or less free communication between the lymphatics of the organs thus connected, as was shown in two cases by injecting the recent specimens with colored fluids. Thus a starting-point is offered from which many important pathological deductions may be drawn. It explains the course of purulent collections from the broad ligament to the cæcum, and vice versa, and the frequent determination of pus accumulations toward the iliac fossa finds herein an acceptable anatomical explanation."

The author remarks that as Glado has been able to prove the existence of this lymphatic communication in but two cases, it is therefore exaggerated or at least premature to describe this as a constant anatomical condition, and adds that further researches will be necessary to prove the pathological value of Glado's discovery.

GERMANY.

A Simple Method of collecting the Isolated Secretion of Each Kidney in the Female.

ALFRED NEUMANN (*Deutsche Med. Wochenschr.*, October 21, 1897), calls attention to the fact that in considering the indications for operative interference in cases of unilateral tumor of the kidney, it becomes expedient to determine the presence and integrity of the other kidney, especially when the urine passed *per urethram* contains blood, pus, kidney-epithelium, etc. Catheterism of the ureters, he says, is difficult of accomplishment, not devoid of danger, and has of itself caused hæmorrhage in fifty per cent. of the cases. The various methods of comparison and the temporary ligation of one ureter have found but few adherents.

His idea rests upon the principle of partitioning off the two sides of the urethra and of the fundus of the bladder to the height of the mouths of the ureters. This he accomplishes by means of a tube of thin metal, 4 cm. in length, 1 cm. in diameter, and containing in its lumen a vertical partition, which is continued beyond the proximal end of the tube to a distance of 4 cm., so that its entire length is 8 cm. At the distal end of the tube the two lateral compartments are prolonged into two diverging tubules to each of which a test tube can be attached. The proximal end of the partition gradually narrows down to a rounded point. The tube and its prolongation have a slight curve with the concavity upward, so that it adapts itself well to the posterior surface of the symphysis pubis.

The method of application he describes as follows: The patient sits well forward on the edge of the operating table and rests the extended and abducted limbs upon the floor or other support; the conical end of the instrument is passed into the urethra with the concavity forward, and readily glides into the bladder upon which any urine which may be present will flow out. Then one of the tubules is attached to an irrigator, and the bladder is flushed with a solution of boric acid. After this fluid has been drawn, the index finger is passed into the vagina and the instrument is gently and evenly pressed against the symphysis pubis, and thus the lower segment of the bladder and the urethra are divided into two separate compartments, each receiving the secretion of its respective kidney. As additional advantages of this method he cites: That the secretions of the two kidneys are received simultaneously, thus allowing a comparison to be made of the amount of secretion from each; that the position of

the patient is less objectionable to her than those employed in other methods of investigation; that neither general nor local anæsthesia is required; that illumination of the bladder is unnecessary, and no danger of infecting ureter or kidney is incurred; and, above all, that it requires little or no dexterity to accomplish the desired object.

Total Inversion of the Uterus.

J. VON CHRZANOWSKI (*Centr. f. Gyn.*, October 23, 1897), gives an account of a case of total inversion of a non-puerperal uterus in a woman fifty-five years of age. She had borne eleven normal children, and her last pregnancy, which occurred eighteen years ago, terminated with an abortion at the end of four months, which was accompanied by such profuse hæmorrhage that she was confined to bed for many weeks. About five years ago a sudden profuse flooding took place without any assignable cause. For the last three years the patient experienced a gradually increasing dragging sensation in the pelvis, which culminated shortly before she came under observation, in the protrusion from the genitals of a violently bleeding tumor about the size of a fist. This tumor was attached by a rather narrow pedicle to a second one, which just appeared between the lips of the vulva. The failure to find the fundus by abdomino-vaginal palpation and the discovery of the mouths of the fallopian tubes in the proximal tumor led to the diagnosis of inversio uteri with tumor attached to the fundus.

The pedunculated growth was first removed by means of the Paquelin cautery, and after three days' treatment of the purulent discharge the radical operation was undertaken. A rubber tube was passed about the uterus as high up in the vagina as was possible. Then a horizontal incision was made in the fundus, which opened the artificial cavity and exposed the tubes, which were ligated and freed by incision, thus giving access to a portion of the broad ligaments, which were treated in a like manner. Then the upper portion of the fundus was resected, thus exposing a further section of the ligaments, and so the operation continued with alternating morcellement and ligation until the cervix was reached, when the anterior and posterior walls were united by suture, which included all the stumps. The convalescence was uneventful as far as the pelvic condition was concerned, but the patient became the subject of a croupous pneumonia, from which she rallied, however, and left the hospital cured at the expiration of four weeks. The tumor attached to the fundus proved to be a myoma, while the wall of the uterus was found upon microscopical examination to have undergone total fatty degeneration, not a trace of the muscular structure having remained.

The Treatment of Vaginitis and Endometritis with Lactic Acid.

WLADIMIR ILKEWITSCH (*Centr. f. Gyn.*, October 30, 1897), gives an account of his experiments with lactic acid in the treatment of vaginitis and endometritis. He bases his claim for the therapeutic value of this agent upon the following observations made by himself and other clinicians: The acidity of the vaginal secretions is due chiefly to the presence of lactic acid, which is either a product of the bacillus dœderleini or of the physiological activity of the vaginal walls, or both. He lays stress upon the fact that in 99 cases out of 100, when the vaginal secretions are distinctly acid, pathogenic micro-organisms cannot be found

therein, or if so, their virulence is markedly impaired. In the secretions of the normal vagina of a pregnant woman 0.4 per cent. of lactic acid was found. The growth of the streptococcus pyogenes was inhibited when the bouillon culture contained 0.1 per cent. of lactic acid, though the staphylococcus pyogenes required 0.4 per cent. before it yielded.

The author irrigates the vagina with about 800-1000 c.c. of a 3 per cent. aqueous solution, and claims to effect therewith a complete destruction of all micro-organisms present. To cervical erosions and the uterine mucosa he applied the remedy in strengths varying from 50 to 100 per cent. From a careful study of a limited number of cases he draws the following conclusions: (1) That the topical application of lactic acid to the endometrium markedly diminishes the amount of fluor albus; (2) that irrigations of the vagina with a 3 per cent. solution destroy saprophytic and pathogenic micro-organisms and cure colpitis; (3) that the same solution removes unpleasant odors; (4) changes the color of the discharge from yellow-green to white; (5) that lactic acid is a safe remedy in ambulatory cases, even with an existing salpingo-oöphoritis, and (6) the remedy will, in many cases, replace curettage.

The author finally adds that in view of the fact that the uterine cavity secretes an alkaline fluid and is in its normal state entirely free from micro-organisms, he intends to compare the results obtained from the topical application of alkalies in endometritis with those arrived at by the use of lactic acid.

SWEDEN.

A Case of Pregnancy and Parturition after Ventro-fixation of the Uterus.

DR. VIGGO ESMANN (*Hospitalstidende*, June 23, 1897), reports a case of delivery following ventro-fixation. Since the operations for correcting malpositions of the uterus have come into use the effect of these upon parturition have been noted with interest. The patient was thirty-three years of age, and had given birth to two children, the youngest of which was eight years of age. Since then she had suffered from prolapsus uteri. Pessaries had been used without benefit, and five years ago a ventral suspension was performed. The uterus was attached to the lower part of the abdominal incision by means of silkworm gut. She made a good recovery, and after the removal of the sutures returned to her work in the country.

She soon became pregnant again, and suffered from nausea and vomiting. A ventral hernia developed in the abdominal incision, which caused her much suffering.

Examination showed a normal, well-developed pelvis, the abdomen was much distended; the uterus extended above the umbilicus and was adherent to the abdominal wall in the line of the incision. A large portion of it filled the hernial sac. The fœtus was found in the breech position. Owing to the hernia the patient spent the greater portion of the last two months of pregnancy in bed. When labor began the first stage was prolonged, and the child's foot presented. The pains became weak, and it was thought best to deliver with forceps. This was accordingly done. The child was of average size and remained healthy and strong. The patient had a slight hæmorrhage from the eighth to the twelfth day but made a good recovery and left the hospital to return in a few months for operation upon the hernia.

The development of the hernia seems to have been the most interesting feature in this case. The uterus contracted normally.

Guérardcites a case in which, after forceps delivery of a patient with ventro-fixation of uterus, such a profuse secondary hæmorrhage occurred that it was necessary to perform laparatomy and divide the adhesions in order to stop the bleeding. After this the uterus contracted and the patient recovered. In 17 per cent. of Demelins' cases, pregnancy was interrupted either by abortion or premature parturition. In 21 per cent. the patient suffered pain during pregnancy; in 16 per cent. there was difficulty in urinating; in 3.1 per cent. the fœtus was in shoulder presentation; in 1.06 per cent. there was prolapse of the umbilical cord.

In not less than 8 per cent. there was hæmorrhage during the delivery of the placenta.

In 9.8 per cent. parturition was concluded with the help of forceps; in 4.3 per cent. by version, and in 3.2 per cent. by the Cæsarean operation.

The author concludes that ventro-fixation may have a very disturbing influence upon parturition, and it should not be performed upon a woman capable of conception, unless the indications were very clearly defined.

Mexico.

A Case of Unilateral Hydrosalpinx successfully operated upon by Antero-vaginal Cœliotomy, with Comments.

Dr. Pagenstecher (*Gaceta Mid. de Mexico*, November 12, 1897), commends the effort of Dr. Harris, of Philadelphia, to popularize the more accurate and scientific term "cœliotomy" instead of the word "laparotomy," which is so commonly used to indicate an incision into the peritonæal cavity. The case presented was that of a woman thirty-three years old. She had been married sixteen years but had never been pregnant. She complained of vague pains in the lower part of her abdomen. Upon examination a tumor, the size of a seven-months fœtus, was found occupying the right side of the pelvis. It was smooth, of irregular form, fluctuating and appeared to be intimately connected with the uterus. It was not painful to pressure. The left appendages appeared normal. The diagnosis lay between a pyosalpiux, a small ovarian cyst and a hydrosalpinx.

A longitudinal incision was made from the urethra to the cervix. With the curved scissors and the finger the bladder was carefully separated from the uterus, and the vesico-uterine peritoneal fold was opened with a wide incision. Care being taken to secure the peritoneal folds with forceps, the finger was then introduced and the pelvis explored. The tumor, upon the right side, proved to be a fallopian tube enormously distended. Owing to adhesions it was impossible to bring the uterus forward into the incision. In attempting to separate the distended tube it was ruptured, and the clear serous fluid escaped, making the diagnosis evident. As much of the sac as possible was removed, and the peritonæal fold united with catgut sutures. Two silkworm gut sutures were passed through the edges of the incision and into the uterus to keep it in a position of anteflexion. The vaginal incision was closed with catgut. The patient had no reaction following the operation. She sat up in bed on the fourth day—was discharged on the eighth.

The convalescence seems remarkable when compared with the most favorable cases where the abdominal operation is done. This circumstance has made the author more inclined to operate through the vaginal route. Two important advantages of the vaginal method are the avoidance of the abdominal scar and the consequent risk of hernia, and the absence of shock. Of course, the value of seeing the operative field and thus avoiding the danger of injuring the neighboring organs and the security against hæmorrhage is a great consideration in favor of opening the abdomen, but still the author thinks that these advantages are over-balanced by those of the vaginal route.

The cases most suitable for this method are the unilateral tumors of the tubes; adherent or non-adherent retroversion of the uterus. By this means the uterus may be attached to the anterior vaginal wall or the round ligaments may be shortened. Small tumors of the uterus, such as sub-peritonæal fibroids, may be removed.

Ovaries and tubes may be removed with less danger than by the abdominal method.

The author admits that the procedure is not new but wonders that it has not been more frequently employed.

OBSTETRICS.

UNITED STATES.

Palpation of the Fœtal Heart Impulse in Pregnancy.

DOUGLAS F. DUVAL (*Bulletin of the Johns Hopkins Hospital*, October, 1897,) says that it is not generally known that under certain circumstances the impulse of the fœtal heart may be felt through the abdominal wall of the pregnant woman. Only two cases have been observed in this country, by Dr. Kelly, one in 1894, the second in 1895. Fischel in 1881 described three cases. Valenta claims priority for a case observed in 1860. Fleischman also reports one case in 1885. The positions in the cases were as follows:

Valenta.—First face presentation.

Fischel.—Left bregmatic-iliac-anterior; right occipto-iliac-posterior; left mento-iliac-anterior.

Fleischman.—Right mento-iliac-anterior.

Kelly.—Right bregmatic iliac-anterior; left occipto-iliac-posterior.

It will be seen that observations have been made in face, brow and occipito-posterior positions—two each. With the exception of Dr. Kelly's second case, the observations were made during labor, *after* the escape of the liquor amnii, and in all the cases the abdominal wall of the mother was comparatively thin.

The Treatment of Abortion.

HENRY J. GARRIGUES (*Medical News*, November 6, 1897), says that there is much difference in opinion as to the use of the term abortion in contrast to the term miscarriage, but he prefers to use the terms interchangeably as expressing

an interruption of gestation at any period previous to the viability of the fœtus. After that period the case should be considered one of premature labor, and treatment for abortion is not indicated.

From clinical notes, gathered from an extensive experience in obstetrics and gynæcology, it seems that abortion is most common during the third month of gestation, and with diminishing frequency during the second, fourth and fifth months. It is highly probable that many abortions occur at very early periods of pregnancy, which do not come under medical observation, although there may occasionally be alarming hæmorrhages, requiring medical assistance.

The most common symptom of threatened abortion is hæmorrhage from the uterus. This may be so profuse as to threaten life, and may continue for weeks or even months. In some cases only clots are discharged, in others the entire ovum, or portions of it, or even the fœtus itself, is expelled. There is usually cramping pain in the uterus and backache. The uterus will be changed in shape and size, varying with the period of gestation. The os is more or less patulous. At the normal end of pregnancy or even in premature labor, the ovum separates from the uterine wall and interference is not usually required. Earlier than this both the decidua vera and the reflexa may be left behind, exposing the patient to the dangers of hæmorrhage and septicæmia. Where rational treatment has been instituted from the beginning the prognosis is good, but if left to itself or improperly treated, it is a dangerous, often a fatal accident.

Prophylactic measures frequently prevent abortions, as the institution of specific treatment where syphilis is the cause. Removal from a malarial district may check habitual abortions. Sometimes a uterine displacement needs correction. Rest in bed for a week at what would be the menstrual period, with teaspoonful doses of fluid extract of viburnum prunifolium, *t. i. d.* This is a better plan than complete rest during the whole of pregnancy, which is very weakening. Violent exercise should be avoided. In threatened abortion opium suppositories, a saline, and an ice-bag to the hypogastrium may be used. If the hæmorrhage is profuse or prolonged, the cervical canal open, or the ovum projects into the vagina, abortion is inevitable, and the uterus should be emptied at once. Tents and tamponading are not the best treatment. During the first three months of pregnancy the cervical canal may be dilated with conical, hard rubber dilators. Later on olive-shaped, hard rubber dilators may be used, and, if needed, Hanks' dilators. For emptying the uterus Thomas' large dull wire curette is excellent, except at very early periods, when a Recamier curette may be used, and still earlier Simon's sharp spoon may be used. Where the uterus is small it is only necessary to pack the vagina after curettement, but if larger, the uterine cavity may be packed with iodoform gauze. Before and after curettage the uterine cavity should be flushed with a quart of one-per-cent. creolin emulsion, used with a single-current metal tube. The tamponade is removed the next day, and a vaginal douche of one-per-cent. carbolized water given twice daily. Ergot may be administered in doses of one teaspoonful three times daily until an ounce has been taken. Anæsthesia is preferable, and subsequent pain, if any, may be controlled by an opiate. The treatment above given applies also to cases of induced abortion. Where pregnancy is terminated after the fifth month, and the placenta is not expelled, tampon the uterus and vagina and wait twenty-four hours; repeat if necessary, and if still there is re-

tention, mechanical interference is necessary. In septic cases the prognosis must be guarded. Sometimes curettage is dangerous. General treatment and stimulation to the point of toleration, with perhaps five-grain doses of salophen every three hours. The bowels must be kept open. In localized septic cases treatment similar to that for simple abortion is indicated.

A Case of Abdominal Pregnancy with Tubal Abscess Complication.

D. S. FAIRCHILD (*Chicago Clinical Review*, December, 1897): The patient was first seen in July, 1897, and gave a history of pelvic trouble and pain accompanied by a discharge of pus from the vagina. About the first of May she had a severe onset of pain followed by chills and fever, which had persisted more or less since that time. In June a mass had been observed in the right iliac region, steadily increasing in size. The patient was emaciated and septic. The menstrual periods were regular, but at such times the pain was increased. The pain and fever were lessened when the discharge of pus was most abundant and conversely. The pelvis seemed filled with inflammatory exudate, more marked upon the left side—a sense of deep fluctuation could be felt. As the patient was in such a bad condition, and there was so much tension on the right side, it was determined, on consultation, to make an exploratory incision, and if adhesions had been formed to the abdominal wall, to drain as a temporary relief. The peritonæal surfaces were not united, and the wound was closed. A vaginal hysterectomy was advised, but absolutely refused by the patient. The pain and discharge of pus continued, while the mass on the right increased in size, extending on October 25, about half way to the umbilicus. Her condition at this time was so serious that the idea of an operation was abandoned. Temperature 104°, pulse 130 and very weak. She rallied somewhat in a few days and decided to go to the hospital and submit to an operation, which was performed on October 30.

On entering the posterior cul-de-sac some pus cavities were found, which discharged freely, and higher up a larger sac, which discharged a quantity of dark fluid. On passing the hand into this sac he was surprised to find a fœtus of six or seven months development. This was extracted with part of the placenta. The wall of the sac was attached to the uterus and intestines as well. To prevent hæmorrhage as far as possible, the uterus was clamped and removed. Such portions of the sac and placenta as could be peeled off without danger to the intestines were removed. The right tube was free from pus, but there was an accumulation in the left tube. The patient was, however, too exhausted to permit of further procedure. The patient rallied. The gauze packing was changed every three hours, bringing with it pieces of placenta and membranes. The drainage was perfect, but the patient gradually sank and died from exhaustion on the third day. The special interest in the case was the coexistence of an old pelvic inflammation with an unsuspected abdominal pregnancy. The severe attack of pain on May 1 probably announced the escape of the fœtus into the abdomen. Outside of the fœtal membranes was the pus formation. The regularity of menstruation and the septic condition, showing the presence of pus, prevented the idea of extra-uterine pregnancy, so that the fœtal heart sounds were never listened for.

British West Indies.

Puerperal Albuminuria and the Action of the Sulphate of Quinine on the Gravid Uterus.

R. C. Bennett, of Trinidad (*Lancet*, September 4, 1897), reports two interesting cases. He was called to the first case, and found her in convulsions. The brief history obtained was that she was a primipara, twenty-two years old, pregnant eight months, and had suffered from œdema for one month. Half-drachm doses of bromide of potassium relieved the convulsive attacks somewhat. The following day the patient was semi-conscious, but stupid. There was great œdema of the face, extremities and labia. The urine was scanty and pale, containing about 20 per cent. of albumen. Bowels much constipated. No indications of approaching labor. A purge and a diuretic mixture were given, and a milk and soda-water diet ordered. The two days following there was some improvement, but no indications of labor.

In the meantime attention was demanded by another primipara, aged twenty-four years, eight months pregnant, and suffering from enormous œdema. The patient was anæmic, with hurried action of the heart and some dyspnœa. The urine was scanty and loaded with albumen, but there were no indications of convulsions or the beginning of labor. As she was also suffering from intermittent attacks of malarial fever, five-grain powders of sulphate of quinine were prescribed, *t. i. d.* Within forty-eight hours after taking the quinine she was delivered of a still-born child—a desirable result in her condition. On returning to Case I., ten-grain powders of sulphate of quinine were ordered, to be given every four hours, with the object of testing the value of quinine in inducing labor. Before the sixth powder was given labor pains had set in, and she was safely delivered of a still-born child. Both patients did well.

Whether quinine acts directly on the gravid uterus, or indirectly through the nerve centers is not clear, but that it can and may bring about premature labor by inducing uterine contractions in some cases must be believed. It should therefore be administred with great caution to pregnant women, although some are able to take it with impunity.

Great Britain.

A Case of Cæsarean Section for Pregnancy Complicated by Malignant Disease of the Rectum.

Albert J. Riddett (*Ibid*, September 4, 1897), reports the case of a woman thirty-seven years of age, VI-para, at term, who had been twenty-four hours in labor and was greatly prostrated, upon whom he performed Cæsarean section, owing to a malignant growth of the rectum that filled the pelvic outlet. The child was in transverse position. The abdomen was opened in the ordinary manner. An assistant firmly compressed both broad ligaments to control hæmorrhage, and the uterus was opened by a median longitudinal incision. The fœtus and placenta extracted, and the uterus closed by twelve deep silk sutures. Superficial sutures were added to approximate the peritonæal coat. The Fallopian tubes were then ligated and removed. The abdominal wall was

sutured in three layers (*a*) peritonæum with catgut, (*b*) the sheath of the rectus with silk, (*c*) the skin with silk-worm gut. The woman made a good recovery. The child, a boy, survived.

Two Cases of Puerperal Septicæmia treated by Antistreptococcic Serum.

RICHARD RICHMOND (*Ibid.*, September 25, 1897), reports the following cases: Case I., a multipara, had a chill the third day after delivery, with a temperature of 102.2° and feelings of great discomfort. The lochia was scanty, pale and somewhat fetid, and there was tenderness over the uterus. A calomel purge and five-grain doses of quinine were given; there was slight temporary improvement, but three days later the temperature was 101.6°, and 10 c.c. of antistreptococcic serum were injected, the quinine being stopped. The next day the temperature was normal, and so continued; 5 c.c. of the serum were injected on that and the following day. All unpleasant symptoms subsided and the patient soon recovered. The second case was a primipara, who was taken with a chill on the fourth day following a difficult case of breech presentation, with laceration of the perinæum. Vaginal douches of bichloride (1-2000) were given, and quinine administered. The temperature of 101.2° continuing, an injection of 8 c.c. of serum was given followed by 5 c.c. on the following two days. The temperature dropped to normal, there was no fetor to the lochia, and the general condition was good. Three days later the temperature rose to 104°, the lochia was very offensive, and there was great tenderness of the abdomen, with some exudation to the left of the uterus. The uterus was irrigated with bichloride solution (1-4000), hot fomentations were ordered for the abdomen, and 10 c.c. of serum were injected. The following day the temperature was 100°, and 5 c.c. of serum were injected. The intra-uterine douche was repeated the following day, and the injections of serum continued for a week. But the temperature remained about 100° for twelve days, rising once to 102°. After that the progress toward recovery was slow but uneventful.

A Case of Extra-uterine Gestation.

JOHN SIDES D. MAC CORMAC (*British Med. Journal*, October 2, 1897,) gives the history of a fatal case of extra-uterine gestation. A woman, aged twenty-seven years, the mother of three children, who had not menstruated for two months, was seized suddenly with violent pain in the lower part of her abdomen, accompanied by vomiting. When seen by the writer four hours later she was in collapse. No tumor could be defined by palpation. Deep-seated dullness on percussion extended from the median line to the right iliac fossa. Operation was impossible, owing to the profound collapse. Active stimulation was employed to resuscitate her. She died, however, in eight hours. At the autopsy the peritonæal cavity was found filled with fluid blood and large clots. The right Fallopian tube was found to be enlarged and ruptured one and a half inches from the right cornu. The uterus was somewhat enlarged, soft and lined with deciduous membrane. The fœtus was free in the peritonæal cavity, wrapped in blood clots, and was of two months' development.

AUSTRALASIA.

Pueperal Septicæmia treated with Antistreptococcic Serum—Recovery.

G. T. HOWARD, of Melbourne (*Intercolonial Med. Jour. of Australia*, October 20, 1897), reports a case of primipara, who was delivered by forceps after a tedious labor, with lacerations of the cervix and perinæum. The latter was immediately repaired. Placenta was easily expressed and the uterus irrigated with a one-per cent. solution of carbolic acid. The next day the temperature was 101.6° and on the day following 103.2°. This continued until the fifth day, when curettage was performed, bringing away some shreddy lymph. The temperature persisting on the sixth day, 10 c.c. of antistreptococcic serum was injected; this was repeated twice at intervals of about fourteen hours. Each injection was promptly followed by a fall of temperature, succeeded by a slight rise. After the third injection the temperature was 100° continuing so for three days, and not until three weeks after the confinement was the temperature normal. Vaginal irrigations of perchloride of mercury were used for a week after the curettage, then carbolic was substituted.

Pueperal Infection treated with Injections of Anti-streptococcus Serum

T. J. HENRY, of Grafton, N. S. W. (*Australasian Med. Gaz.*, October 20, 1897), attended a primipara, aged fifteen years. She had been in labor for twenty-four hours when first seen, and the os was not then fully dilated. After a tedious second stage forceps were applied and a male child, weighing eight pounds, was delivered. There was no laceration. Seven minutes after birth there was a sudden hæmorrhage. The placenta could not be expelled by Credé's method, and the hand had to be inserted into the uterus. Bimanual compression failed to check the hæmorrhage, but injections of very hot water ultimately secured contraction of the uterus. No secundines remained in utero. On the fifth day the patient had prolonged rigors, temperature 104.6°. The uterus was irrigated with a two-per-cent. lysol solution. This was followed by a fall of one degree in temperature; 20 c.c. of antistreptococcic serum was injected and three hours later the temperature was 100°. The following day the temperature having risen to 101°, the uterus was again irrigated, and the injection of serum repeated. In four hours the temperature was normal. A vaginal douche of lysol solution was given the day following, and the patient was up and perfectly well on the eleventh day. The infection was probably due to intrauterine manipulations necessary to control hæmorrhage.

Two Cases of Puerperal Septicæmia treated with Antistreptococus Serum, Contrasted with One in which Serum was not used.

GEO. DE CLIVE-LOWE, of New Zealand (*Australasian Med. Gaz.*, October 29, 1897), reports three cases of puerperal septicæmia. The first had been attended by an ignorant midwife, who had broken the cord by traction, leaving the placenta in the vagina. Dr. Clive-Lowe was summoned on the fifth day and found the patient in a state of collapse, with a temperature of 105.5°. The decayed placenta was removed, and the uterus and vagina thoroughly washed

with a 1-3000 corrosive solution, and an iodoform suppository introduced. Three injections of 20 c.c. each of serum were given at intervals of twelve hours, and at the end of that period the temperature was only 100°, and all bad symptoms had vanished. On the eighth day the temperature was normal, and an uninterrupted recovery was made.

The second case began to show signs of fever on the third day after confinement. Examination revealed a shred of membrane and placenta adherent to the uterine wall. After this was removed the uterus and vagina were irrigated with a 1-3000 corrosive solution, the uterus was gently curetted, and again irrigated, and a suppository of iodoform and boracic acid inserted; 20 c.c. of serum were injected, the temperature being 104°. Twelve hours later the uterine irrigation was repeated, and 10 c.c. of serum injected. The bowels were thoroughly evacuated by a saline purge and an enema. The temperature was now 99°. Five c.c. of serum was injected the next day, and a fresh packing of iodoform gauze placed in the vagina. The temperature was normal in a few hours, and the recovery speedy and uninterrupted.

On being called to the third case the patient was found with half the placenta adherent to the uterine wall on the fourth day after confinement. The temperature was 104°. No serum being at hand the placenta was removed, the uterus curetted and irrigated, as in preceding cases, and the bowels moved with salines. Eight hours later the temperature had fallen to 102°, but went up again to 104.4°. Corrosive sublimate douches were ordered every two hours, and 10 grains of quinine given. The temperature gradually dropped, and continued for three days to vibrate between 99° and 100°. At the end of that time it became normal. The breasts in this case were very large and hard, but massage with warm olive oil relieved the tension. In comparing these cases the uninterrupted fall of temperature in the first two cases as contrasted with the vacillating temperature in the third is of interest.

CANADA.

Tubal Pregnancy diagnosed before Rupture, Cœliotomy and Recovery.

W. R. NICHOLS, of Baden, Ont. (*Canada Lancet*, October, 1897), says that it was formerly supposed that tubal pregnancy was of rare occurrence, but in a series of 3,500 general autopsies made by Dr. Formad, Pathologist to the Philadelphia Hospitals, no less than thirty-five cases of ectopic gestation were found. As a practical subject it can never be devoid of interest, owing to the difficulties of diagnosis, the suddenness of the symptoms and the danger to life.

Mr. Tait, in 1889, speaks with scepticism of the possibility of diagnosis before rupture. J. Bland Sutton, in his work, published in 1893, says that he only knew of one case of diagnosis before rupture. In the following case, the history that led to the diagnosis, may be of assistance. The patient, a German woman of thirty-seven, had had eleven children and one miscarriage. After her second confinement had some "inflammation" in pelvis, which passed away, but left more or less tenderness. In June, 1895, she had a miscarriage from which she recovered quickly, with no complications. She menstruated on July 12, again on August 11, but no further show occurred until September 15, when, while washing at a tub, she had a sudden and violent attack of pain in the left lower

part of abdomen, accompanied by a gush of clear fluid from the vagina. No further disturbance occurred until September 20, when another attack of pain was followed by a hæmorrhage, simulating menstruation, which continued until the 26th. An examination on September 15 showed a slight enlargement of the uterus, slight softening of the cervix and some fulness on the left of uterus, but no special tenderness.

Subsequent examinations between the 20th and 30th showed a distinct tumor occupying the left Fallopian tube, no inflammatory tenderness, and separated from the uterus by a distinct sulcus. Due regard was paid to the perceptible enlargement of the mass, the previous diseased condition of the tube, and the patient's ordinary regularity in menstruating. The diagnosis was confirmed by consultants, and the patient was removed to a hospital, and the abdomen opened in the middle line. The tumor was bound by firm adhesions to the pelvic wall and bowels. These were broken up and the mass removed. The recovery was rapid and uneventful. The tumor was sausage-shaped, dark in color, due to the blood within. A distinct membrane formation and the stump of a cord were demonstrated, but the fœtus was not found, being lost, probably, by the rupture of the tube during its removal.

Thirteen months after the removal of the left tube the patient was delivered of a fine, healthy child.

GERMANY.

The Value of X or Rœntgen Rays in Obstetrics.

L. THUMIM AND M. LEVY (*Deutsche Medic. Wochenschr.*, August 5, 1897), report the results of a series of experiments with the Rœntgen rays on the pelves of pregnant women, with the hope of being able to obtain accurate photographs of the pelvic bones, and the measurements of the pelvic diameters. The first attempts were unsuccessful, owing to the necessity for a long exposure, which injured the skin, and the impossibility of using screens of sufficient size. In April last Dr. Levy commenced a new series of experiments with improved methods, consisting of different tubes, new Rœntgen plates invented by him, and augmentation screens, so that he was able to reduce the time of exposure to about one-twentieth of the time formerly needed. The method of taking the pictures is as follows: The pregnant woman is placed horizontally to the box containing the plate. It is desirable to use a plate not less than thirty by forty centimetres in size. The tube is applied perpendicularly above the symphysis at a distance of fifty centimetres from the plate. The duration of exposure depends on the thickness of the parts, also the period of pregnancy. An exposure of from two to five minutes gives a satisfactory picture of the entire pelvis, but with the pelvic measurements, of course, in perspective distortion. An instrument was designed by Dr. Levy for correcting these photographic distortions, by which, with the aid of mathematical calculations the various pelvic diameters could be obtained with accuracy. And even without exactly calculating the precise measurements these photographs are of value, for comparisons can be instituted between the picture and that taken of a normal pelvis in the same position, making any marked differences evident at once.

Further experiments are in progress to enable pictures to be taken of the pelvis and the fœtal head, from which any disproportions could be readily

noted, and proper measures taken. It is impossible to give an exact idea of the instrument without the illustrations and diagrams given in the original article.

Recurrent Tubal Gestation with Normal Pregnancy and Delivery between the First and Second Tubal Gestations.

Dr. OSKAR KOKMANN (*Centr. f. Gyn.*, October 9, 1897), cites a remarkable case of extra-uterine pregnancy, which was followed four years thereafter by a normal pregnancy, and after another lapse of two years, by a second tubal pregnancy, in the sound tube. The patient first came under observation on October 6, 1890, with a history as follows: Age twenty-four years; menstruated regularly from her thirteenth year; married in 1883 at the age of seventeen, since which time she suffered from a profuse leucorrhœa, and in 1884 had a miscarriage. The last regular normal menstruation occurred in July, 1890. Thereupon the flow was suspended until the early part of September, when a profuse metrorrhagia appeared, which lasted for fourteen days, and recurred after a lapse of a fortnight. During the time between July and September the patient suffered from repeated attacks of lancinating and cramp-like pains in the hypogastrium, accompanied with nausea and vomiting, and occasional elevations of temperature.

Physical examination revealed a somewhat distended abdomen. The breasts contained no colostrum. The uterus was somewhat enlarged and anteverted. To the left of it was an elongated curved mass bound down by adhesions posteriorly and on both sides. From Sept. 10 to 18 there was a scant intermittent menstrual flow with the same sharp pain. A second examination disclosed dense resistance in the left iliac region, extending to the navel, above and slightly beyond the median line to the right. Upon vaginal examination the uterus was found to be crowded against the symphysis, and the same dense resistance was appreciated in the left and posterior fornices. The patient was very anæmic; pulse and temperature were normal.

This state of affairs continued until October 20, when a laparotomy was performed. The incision was made through the left rectus abdominis, disclosing a deeply-injected peritonæum. From the author's description it would appear that the anatomical relations were very much disturbed. Suffice it to say that two hæmatoceles were emptied of their contents and tamponed with salicylic gauze. Patient made a good convalescence and was discharged cured on November 21. The author remarks that the anatomical picture and clinical course point to extra-uterine pregnancy, but not with absolute certainty.

From 1894-1895 the patient passed through a normal pregnancy and was delivered of a healthy child. On July 28, 1896, she again came under observation. Since her first admission to the hospital she had developed a tuberculosis of the lungs. Her last menstruation was in June. Abdomen not distended; breasts contained no colostrum; no sign of existing pregnancy; diffuse tumefaction in right iliac region; the left tender upon pressure. The external genitals and vagina appeared normal; the uterus was pressed forward and to the left; to the right was a tolerably dense mass, apparently attached to the uterus, which was immovable. The diagnosis of right tubal pregnancy was made and a laparotomy performed. A considerable quantity of coagulated blood was found in Douglas' cul-de-sac walled in by the adhesion of neighboring coils of intestine. To the right of the uterus was a tumor of firm consistence, about the size of a

small fist and adherent on its posterior and inferior aspects to the surrounding structures. Upon closer examination this was found to be the distended tube and was removed. Two smaller tumors to the left of the uterus were similarly dealt with.

Eight days after the operation the patient died of lobar pneumonia and peritonitis. The author gives a detailed report of the autopsy, of which the pelvic condition alone interests us. The peritonæum was deeply injected and coated with fibrin and brownish serum. The pelvis contained some fluid with a fæcal odor, but no opening in the gut could be discerned. Greater omentum, uterus and bladder were matted together, and Douglas' cul-de-sac was obliterated by adhesions. To the right of the uterus the stump of the tube with its ligatures could be seen with an atrophied ovary matted to the remains of the broad ligament. The left side presented to view the proximal end of the tube, part of the broad ligament, and the ovarian ligament, all in a tolerably normal condition. The uterus was but slightly enlarged its cavity contained reddish masses, which were ascribed to exfoliation of the mucous membrane and not to the presence of a decidua. A microscopical study of the enlarged tube removed from the right side proved its contents to be an ovum of about six weeks' growth.

The Employment of Hydrostatic Dilators in Obstetrics.

A. MUELLER (*Münchener Med. Wochenschr.*, October 12, 1897,) states that the hydrostatic dilator is daily becoming more indispensable to the accoucheur, and ascribes to it a wide field of usefulness. He uses both elastic and inelastic instruments, the latter, an invention of Champétier, being preferred. In the induction of premature labor, the colpeurynter, he says, is a valuable agent for producing uterine contractions; but of far greater efficacy is the intra-uterine application of the bag in graded sizes for the dilation of the cervix. As further indications he mentions placenta prævia complicating labor, in which the instrument not only serves to dilate the cervix, but also controls the hæmorrhage, and cases of contracted pelvis, in which the amniotic sac cannot efficiently accomplish the desired object and is in danger of rupturing prematurely.

He prefers the inelastic dilator, as it does not burst as readily as the other, but mainly on account of the fact that the elastic bag, owing to its pliability, often passes through an insufficiently dilated cervix, even when distended to dimensions greater than those of the fœtal head. The irritability of the uterine muscular fibres is not the same in different individuals. In some they respond to the slightest irritation, while in others the most powerful stimulation will not inaugurate contractions. Again, in certain cases the pains will continue rhythmically and with undiminished intensity after the cessation of the stimulation, while in others "cessante causâ cessat effectus." In the latter class of cases he uses the inelastic dilator,distends it to far beyond the size of the head, and then attaches to the tube or stem a weight of about three kilograms (the average weight of the fœtus), which passes over the foot of the bed and makes traction. If the case is a protracted one he intermits in the use of the weight. When the cervix is sufficiently dilated he removes enough water from the bag to allow of its spontaneous expulsion. Then follow version and extraction.

FRANCE.

Antipyrin and Lactation.

G. FIEUX (*Archives Clin. de Bordeaux*, October, 1897,) insists that antipyrin is an invaluable remedy for the control of the after-pains, especially in primiparæ. In view of the fact that the pains are often due to the attempts of the uterus to expel clots and the like, he considers antipyrin superior to opium, because the latter drug causes a cessation of the contractions, while the remedy in question allows them to continue, but renders them less spasmodic.

As certain clinicians raised serious objections to the administration of antipyrin to a nursing woman, he made a series of interesting experiments, from which he draws the following conclusions: It is true that antipyrin is excreted in the milk of a nursing woman, but even when given in as large a quantity as four grammes in sixteen hours it appears in the small ratio of less than 1 in 20,000. It does not influence the quality of the milk in any way whatsoever, nor is the amount of the secretion diminished, especially if the woman continues to nurse. The infinitesimal amount of the drug ingested by the nursling does not seem to exert any detrimental influence upon its general well-being.

PÆDIATRICS.

UNITED STATES.

Report of a Case of Gastro-Intestinal Hæmorrhage in a Newborn Infant.

F. W. GARBER (*Pediatrics*, October 15, 1897), describes the case of a child born of a normal labor and apparently healthy for the first twenty-four hours, during which time it had nursed and had been fed upon crackers and hot water. It had also had three normal stools. The second night after birth the child vomited a small amount of blood mixed with mucus. About forty hours after birth it had a large stool of almost clear blood, dark and clotted. Two more movements of the same character soon followed, and the child showed all the symptoms of great loss of blood, and seemed to have occasional paroxysms of pain. Frequent enemata of hot saline solution, to which brandy was added, were given, and ergot and gallic acid were administered internally. On the second day the stools began to be normal in appearance, and at the end of a week the child had entirely recovered, though it was still pale. There may have been in this case some congenital weakness of the blood vessels, though there was no history of hæmophilia in the family. The causes to which such hæmorrhages are usually ascribed were all absent, and had there been an erosion or ulceration on the intestinal tract recovery could hardly have ensued so promptly. It therefore seems probable to the author that the usual hyperæmic condition of the mucosa of the gastro-intestinal tract, from the rearrangement of the abdominal circulation, was so intensified by the indigestible food as to cause a giving way of the delicate blood vessels. It is not improbable that hæmorrhage in the new-born is of more frequent occurrence than is usually discovered.

Two Cases of Trismus Nascentium successfully Treated by Tetanus Antitoxin.

J. FRIEDMAN (*Cincinnati Lancet-Clinic*, November 6, 1897), reports two cases of trismus nascentium, one in a girl ten days old and the other in a boy of fourteen days. In both, the umbilicus was suppurating, the jaws were locked and there were fever, convulsions and inability to nurse. Gibier's serum was employed, of which the adult dose is a bottle every six hours. In these cases one-third of a bottle was used as the initial dose, repeated in six hours. Immediate improvement followed each injection, the amount being absorbed before the time for the next injection; complete recovery ensued, the convulsions being the first symptom to yield. In all, two bottles of serum were used in each case; in addition, from a half grain to a grain of chloral was given every three hours.

Mitral Regurgitation in a Child with Transposition of the Viscera.

J. N. HALL (*Western Med. and Surg. Gaz.*, November, 1897), reports the case of a boy three and a half years old, who had suffered in infancy from paroxysms of pain, dyspnœa and sweating, during which the head turned to the right side. He had also been subject to paroxysms of coughing, and had twice raised blood. Six months previously he had had articular rheumatism. On physical examination the heart was found beating on the right side of the chest, which was asymmetrically enlarged. No cause for this displacement being found, the other viscera were examined. The liver was found symmetrically displaced to the left side, the lower border being easily palpable; the spleen and stomach were both demonstrated upon the right side and the right testice hung lower than the left. The cardiac area extended from one inch to the left of the centre of the sternum to an inch to the right of the left mammillary line, reaching up to the second right inter-space; the apex beat was in the fifth space, one inch outside the right nipple. Over the lower part of this area there was a marked systolic thrill; a systolic murmur was audible over the entire chest, and the second sound in the second right interspace was accentuated. The heart was thus no doubt symmetrically transposed, and the murmur of mitral origin, both the symptoms and the physical examination being in favor of mitral disease in a heart so transposed. The lesion is possibly of congenital origin, but it would seem otherwise from the great increase in cardiac area, the forcible apex beat, loud pulmonic second sound, the rough murmur and the thrill. Moreover, there was no clubbing of the nails. The boy was right-handed.

SWITZERLAND.

Therapeutics of Blennorrhœa Neonatorum.

PFLÜGER (*Correspondenz-Blatt, f. Schweiz. Aerzte*, June 15, 1897), inveighs against the use of corrosive sublimate in this disease, and says that the appearance of eyes so treated is characteristic. Instead of an inflammation, with but little infiltration at the beginning, limited to the angles of the lid, the whole region of the cleft of the lid, frequently the parts beyond and often the whole cornea, with the exception of an upper falciform part show ulceration and an opaque yellowish-gray cloudiness. Later these cloudy parts nearly always be-

come necrotic. There seems no reason to reject the old and tried methods for newer and inferior ones. The author uses the following: silver nitrate, boric acid, cold and heat, and an antiseptic, non-irritant vaseline. Cold is indicated only in the initial stage of uncomplicated cases where no fibrinous accumulation has occurred in the mucosa. After the first stage, usually four or five days, and as soon as membrane appears on the conjunctivæ, generally as small whitish dots, occasionally as a diffuse infiltration like that of diphtheria, moist heat must be used, preferably as boric acid compresses. The silver nitrate should not be used till the first active, serous, eventually fibrinous infiltration has subsided and is superseded by the purulent stage. A strength of 0.2 or 0.3 per cent. should be first employed, and if these are well borne and no serious fibrinous exudation occurs, successively stronger solutions up to 2 per cent. may be used. The last strength should be employed at the height of the purulent stage from two to four times daily, the indication for its application being the increase of the discharge after its temporary decrease from the last application. As soon as a single daily application is enough to hold in check the suppuration, weaker solutions should again be employed. Even for cleansing weak solutions of bichloride should not be used. We may employ warm water, a physiological solution of table salt, or a mixture of equal parts of the latter with a saturated solution of boric acid, according to the abundance of the secretion; from every half hour to every hour is often enough for these washings, agglutination of the lids being prevented by anointing them between the washings with vaseline, to which four per cent. of bismuth subnitrate has been added. If corneal ulceration has occurred, however, it is better to use pure vaseline or aristol vaseline. With the greatest skill, there are rare cases which refuse to yield to treatment, especially those that present a clinical picture similar to that of true diphtheria. A frequent grave fault in treatment is the omission of a protective bandage for the sound eye, where only one eye is affected.

Tannalbin in Pædiatric Practice.

H. O. Wyss (*Ibid.*, August 1, 1897), says that tannalbin is a tannalbuminate containing about 50 per cent. of tannic acid. Its preparation by dry heat at a high temperature renders it resistent to pepsin digestion, so that it is unchanged in the mouth and stomach, and even in the intestine is only gradually decomposed. Thus the tannic acid liberated reaches the lowest part of the digestive tract. Egel and Gelinger have reported favorably of its use in acute and chronic diarrhœas, while Vierordt places at the head of all tannic acid preparations. The author has used the drug in 75 cases, 63 of which were under three years of age. Of the total number, 53 were cured, 10 improved, 1 not improved and 11 died. In only two of the fatal cases was the diarrhœa the cause of death, and in four it had ceased before death occurred. In enteritis and acute gastro-enteritis the effect was prompt, the stools showing improvement by the following day. Subacute gastric and gastro-intestinal catarrhs were repeatedly cured in a few days, though definite recovery was sometimes delayed for from one to two weeks by recurrences. Several of the cases had failed to yield to other remedies, and some were very seriously ill. Equal success was experienced in very serious chronic intestinal catarrhs, particularly those of tubercular origin, though the results were somewhat slower. Acute and chronic rectal catarrhs also yielded rapidly to tannalbin given either internally or by irrigation or

enema. Of course, in all these cases the diet was regulated, but the tannalbin was employed only in those cases in which that measure had been proved to be by itself insufficient. The drug gave no pernicious secondary effects, though it is not split up in the stomach. Vomiting usually ceases soon after its administration, and this symptom is no contra-indication to its use. The appetite returns in a short time. For babies the dose should be 0.25 gm., from two to six times daily, according to the severity of the case; for children from one to two years old, the same dose may be given three or four times daily, or double the dose two or three times; for children three to five years old, a dose of 0.5 gm. may be given from three to five times a day. To avoid a recurrence, it is important to continue the drug for one or two days after the cessation of the disease, gradually decreasing the amount. In severe enteritis and in rectal catarrhs it is well to use in addition starch enemata containing 0.5 gm. of the drug twice daily.

AUSTRO-HUNGARY.

Attempts to immunize against Diphtheritic Infection by the Introduction of Antitoxin by Way of the Digestive Tract.

ESCHERICH (*Weiner Klin.. Wochenschr.*, September 9, 1897), says that though the administration of antitoxin in diphtheria has met with undeniable success, there still remained a mortality of 10 per cent. in the larger hospitals, so that the disease must still be regarded as one of the most formidable affections of childhood we have to contend with. Therefore, he says, prophylaxis is all-important, and has hitherto been altogether too sparingly applied. This is ascribed to the fact that the serum is introduced by subcutaneous injection, which method of medication is naturally very objectionable to the laity and especially so when the subject is in a condition of health.

The author thinks that if the antitoxic serum were administered per os for the purpose of immunization the procedure would be more generally adopted. Then follows the account of a series of experiments upon guinea-pigs, in which he injected known fatal doses of toxin mixed with certain amounts of blood drawn from children (not suffering from diphtheria) immediately before and twenty-four hours after the ingestion of about double the ordinary subcutaneous dose of antitoxin (3000-4000 units). The results were disappointing. The immunizing power of the children's blood was not perceptibly increased after their dose of the serum. Thinking that perhaps the hydrochloric acid of the stomach may have destroyed the antitoxin he administered it per rectum to his youthful patients, but met with no better result. He concludes by saying that as a prophylactic measure the introduction of antitoxic serum by way of the digestive tract is a signal failure, and that for therapeutic purposes the subcutaneous injection is the only method of administration that can be considered.

GERMANY.

Total Prolapsus Uteri in the New-Born: Spina Bifida.

HANSSEN (*Munchener Med. Wochnschr.*, September 21, 1897), gives an interesting account of a case of obstructed labor, to which he was called by a mid-

wife, who reported to him on his arrival that she was unable to feel the sutures of the presenting head, and that despite tolerably strong uterine contractions there was no appreciable progress. During a vaginal examination there came a sudden gush of fluid, whereupon the breech appeared at the vulvar orifice, and the labor was soon completed.

Examining the child he found upon its back a spina bifida about the size of a goose-egg, with a rent to one side of about two centimetres in length. Through this opening the cerebro-spinal fluid had drained off, and the consequent diminution of the size of the tumor had removed the obstruction to the labor. Fearing infection through the wound he extirpated the tumor by ablating the redundant skin surface, and approximated the edges over the gaping spinal canal by means of a row of sutures. The tumor had originally extended from the second or third lumbar vertebra to the middle of the sacrum; its inner surface was covered with a bluish-gray membrane, along which coursed several strands of the cauda equina. The child's general condition was fair, and it nursed well. The sphincter aui was relaxed, and allowed a slight prolapse of the rectum. The lower extremities were flexed at the knee, and did not seem to possess power of motion.

Upon being called to the child two days after the operation he found a total prolapse of the uterus, the organ protruding beyond the vulva to a distance of three to four centimeters. The cervix was hypertrophied and œdematous, and a yellowish-white discharge flowed freely from the uterine canal. A fine sound penetrated the cavity to a distance of three centimeters. The uterus could be readily replaced, but would not remain in situ even with the aid of a firm cotton tamponade. Otherwise, there was not much change in the general condition of the child. There was some incontinence of fæces due to the relaxation of the sphincter. The wound seemed to be uniting well, except at one small point, through which fluid exuded and saturated the dressings. The child died nine days after birth, presumably from loss of fluid caused by the incontinence. No autopsy.

The author states that all reported cases of prolapsus uteri neonatorum were accompanied with spina bifida. He thinks that the cause of the displacement is central, though he can offer no explanation for his opinion.

Great Britain.

The Bacteriology of Pertussis.

H. Koplik (*Brit. Med. Jour.*, October 16, 1897), in a series of sixteen cases has employed the following method of examination: The sputum is allowed to stand in a sterilized Petrie dish till it separates with the formation of the characteristic pellets. These pellets are then sown upon media, of which sterilized hydrocele fluid was found the most convenient, being favorable to the growth of the bacillus to be described and unfavorable to the growth of most others. It was found practicable to work only with the sputum of uncomplicated cases, as that of others does not separate and is contaminated with too many other germs. In thirteen out of the sixteen unselected cases a characteristic bacillus was found in large numbers, which could be grown in pure or but slightly contaminated cultures. Stained in the sputum in the crude state, these bacilli are seen in the epithelial cells and free in the meshes of mucous threads. They

occur mostly in zoöglœa, are very delicate and short, and stain quite uniformly with methylene blue. In pure cultures on hydrocele fluid the bacillus grows in a finely dotted layer of a pearly white color. Colonies upon agar-agar are whitish by reflected light, of a straw color or deeper olive by transmitted light, and are irregularly rounded in shape and granular. A "stitch" culture in gelatine forms a finely granular white growth, with a nail head, and does not fluidify the gelatine. Colonies in gelatine are irregularly circular, whitish or straw color by reflected light, olive by transmitted light. In peptone bouillon there is first a fine granulation of the medium, and after a week the surface is covered with a film of bacilli. Upon Loeffler's diphtheria serum the growth much resembles the growth of diphtheria bacilli. The bacillus also grows luxuriantly anærobic. Stained from pure cultures and examined the bacillus measures from 0.8 to 1.7 micromillimetres in length, and from 0.3 to 0.4 micromillimetres in width; it presents a dotted appearance, and in old hydrocele and agar cultures shows club-shaped extremities, which stain more deeply blue. These facts have led to the belief that the bacillus has spores, but the author has obtained only negative results from all the known methods of staining for spores. The author thinks the bacillus here described identical with that of Afanassjew. Animal experiments have been unsatisfactory, deaths from asthenia, œdematous infiltration of the subcutaneous tissues and from pyæmia being among the results obtained, while in no cases were there lung lesions or characteristic convulsive symptoms produced.

Isolation in Scarlet Fever Unnecessary and Inexpedient.

A. WIGLESWORTH (*Lancet*, October 23, 1897), treats scarlet fever by the administration of from one to six grains of carbolic acid every two hours, from so soon as the disease is suspected or diagnosed till after convalescence is established, and says that of all cases that he has seen in the initial stage he has lost none, and has had only three cases of albuminuria, all transient, and only one of glandular suppuration. The author now uses the same drug as a prophylactic, having tried this procedure in the instance of two children that could not be isolated from the patient, giving them two-grain doses twice daily with successful results. That these children were susceptible was shown by the fact that they were attacked by the disease three years later. In all subsequent cases this prophylactic treatment has been followed. Infection has rarely occurred, and always in a mild form. As soon as the urine takes a dark hue it will remain without putrefactive changes for a long time, and never takes on the ammoniacal odor. The present plan therefore is to isolate the patient till the urine shows the characteristic change in color and then to allow the uninfected members of the household (who have also been on carbolic acid) free access to the sick room. Carbolic acid seems to act as an attenuator upon the unknown bacterium of scarlet fever in much the same manner as it does upon, for instance, cultures of the anthrax bacillus, when used in insufficient quantity for its bactericidal purposes. In cultures "each cultivation of the attenuated bacterium is a vaccine for the more virulent—that is to say, a virus capable of producing a more benign malady." Comparing the quantities of carbolic acid which influence the growth of anthrax bacilli in cultures with the dosage used of carbolic acid as related to the amount of blood in the body, supposing the bacterium of scarlet fever in the blood serum to be equally resistant, we find

that this dosage must be more than enough to hinder their growth. Probably the bacterium of scarlet fever is less resistant than that of anthrax, and moreover, the living blood is itself inimical to the growth of germs, and that this power must be increased is shown by the antiseptic condition of the urine. It seems necessary therefore to believe that an attenuation of the germs does thus occur in the body of a patient so treated. If, then, the patient is seen and put under treatment at the beginning of the attack, and the other members of the family are semi-carbolized from that time, it is unnecessary to isolate the latter, for if they take the disease at all (which is unlikely) it will be in the form of a vaccination from the attenuated character of the virus, *i. e.*, a very mild attack, which will render them immune for the future; in fact, it may be wise not to carbolize the unaffected children at all in the hope that they may take the disease in this attenuated form and thus secure future immunity. Of course, it is necessary at present to isolate an affected family from others on account of prejudice, but the author himself believes that the more freely the contagium from such carbolized scarlet fever patients is diffused the better it will be for the welfare of the community at large, and the more the virulence of the disease will be reduced.

Favorable Results in Obstruction of the Trachea by Diphtherial Membrane from the Introduction of Creasoted Oil through the Tracheotomy Tube.

W. EWART AND W. A. HUBERT (*Brit. Med. Jour.*, November 27, 1897), report a case of diphtheria, two years old, in which tracheotomy was performed. No membrane was seen and none ejected. Two days later the breathing again became difficult, and creasoted oil (1-20) was ordered to be dropped into the trachea. Olive oil was used instead, and the breathing became worse, till on passing a catheter down the trachea it was withdrawn covered with membrane. This procedure also set up coughing, with the expectoration of large quantities of membrane. The following day treatment with creasoted oil was begun, a large drop being introduced every half hour. Each time cough followed, and the free expectoration of membrane. Recovery progressed uninterruptedly. It is to be noted that antitoxin had been administered on the day of the tracheotomy, and on the day the olive oil was given. Thus the creasoted oil, by setting up coughing, had a different effect from the olive oil, which simply softened the membrane and facilitated its removal by the catheter. The treatment may be useful in other than urgent cases, and perhaps in cases in which tracheotomy has not been performed: and in cases in which tracheotomy shows extension of the membrane below the larynx it would be wise to begin the method early. It might also be well to try the remedy in cases of diphtheria of the fauces. When used in the trachea the oil should be dropped rather than a quantity of it suddenly injected.

THE

AMERICAN GYNÆCOLOGICAL

AND

OBSTETRICAL JOURNAL.

FEBRUARY, 1898.

THE RELATION BETWEEN SOME PERINÆAL LACERATIONS AND THE NEURASTHENIC STATE.*

By J. H. Etheridge, M.D., Chicago.

The declaration is hereby made that, in a large number of cases in which a perinæal laceration and the neurasthenic state exist, they may occupy the relation of cause and effect.

This declaration is regarded as being sufficiently guarded and comprehensive to not be misunderstood.

The degree or extent of lacerations may be defined as those that may be called medium. Lacerations into the bowel are not referred to in this article because every physician thinks they should be treated surgically. Therefore, they produce no dispute. Lacerations that involve only the skin of the perinæum and are superficial are not included herein, because they rarely produce symptoms. The lacerations referred to are those that leave none, or only a small portion, of the body of the perinæum. Such accidents are too often overlooked or ignored, especially in neurasthenic women.

Perinæal lacerations exist in vast numbers of cases unaccompanied by neurasthenia.

The neurasthenic state exists in numberless instances without perinæal lacerations. It is seen in nulliparous women and in men. Therefore critics cannot retort that this article tries to prove that all cases of neurasthenia depend on perinæal lacerations. No such absurd ground is herein assumed in the slightest degree.

No attempt will be made to describe the technique of perinæorrhaphy. That is a threadbare subject exhaustively considered in all text-books.

It is desired to call attention to the fact that the relation of cause

* Read before the Chicago Gynæcological Society, November 19, 1897.

and effect between such lacerations and the neurasthenic condition is insufficiently considered and far too often overlooked. It has been my good fortune to encounter many cases of this kind, fruitlessly treated by medication, that have promptly recovered after proper surgical procedures.

In attempting to offer proof of the opening sentence of this article it is necessary to define neurasthenia and in doing so the writings of neurologists furnish all that can be said about it. Literally, neurasthenia means lack of nerve strength. That covers the ground sufficiently. It is assumed that health is the aggregate of the functioning of all of the organs of the body. Such functioning requires a certain amount of nerve strength for each organ. If a deficiency of nerve strength of any organ or set of organs exist, sufficient to make one ill, neurasthenia is not far away. In this way there may be neurasthenia of digestive origin, of circulatory origin, of cerebral or of spinal origin, of renal origin, and so on. Hence in any case of so-called neurasthenia, we are reduced to the necessity of asking the question, "What ails this patient?" before we can cure her.

Some patients with perinæal lacerations are exceedingly slow in reaching the condition of neurasthenia after their initial departure from the condition of good health. It is rarely the case that one passes from sound health into the neurasthenic condition suddenly or abruptly. Many women do not reach this state until several years have elapsed since the labors occurred that produced their perinæal lacerations. This fact is encountered almost daily in the practice of a busy gynæcologist and too much emphasis cannot be placed upon it. When the general practitioner's attention is called to this fact in a consultation, he shows his doubts of its value by the remark: "That cannot be because this laceration occurred several years ago." Accordingly, he goes on treating his patients with medicines, refusing to advise surgery. After failing to cure his patient, he gives up the contest, advises perinæorrhaphy and she regains her health in due time.

Ætiology of Neurasthenia.—The causes of neurasthenia are almost as numerous as the organs of the body. They have been classified and grouped in varying ways by various authors. The latest systematic article on this subject is by Professor Charles L. Dana, M.D., of the New York Post-Graduate Medical School, published in the "Twentieth Century Practice," volume ten. He thus sums up the leading causes of neurasthenia:

1. Hereditary nerve sensitiveness.
2. Overwork and worry.

3. Severe shocks, with or without injury.
4. Infections.
5. Abuse of stimulants and narcotics.
6. Abuse of sexual functions.
7. Abuse of digestive functions.

A thoughtful consideration of this list of causes covers the entire ground as well as it can be covered by any grouping or classification. These enumerated causes, after the first one, reveal at once that they involve an exhaustion or an annihilation of the *vis nervosa* as their legitimate work. They can be made to include nearly, if not quite, every malign influence acting to produce neurasthenia.

The one central idea running through this entire list of causes—or any other constructed list—is that of a progressive wearing away of the nerve energy. In some cases, it is done slowly, as in overwork, and, in others, it is rapid, as in shocks. Neurasthenia is developed slowly, seldom suddenly.

Many people develop nerve energy rapidly. If to-day's supply be exhausted by labor, to-morrow morning finds the supply renewed. If this renewing the supply can go on indefinitely, neurasthenia will never develop. If one be unable to replace this supply, he is precisely where the business man is whose expenditures exceed his receipts—he is face to face with nervous bankruptcy or neurasthenia.

Other people renew their nerve energy slowly. Subject them to the well-known causes of nervous exhaustion and they succumb easily and quickly. This fact cannot be magnified too largely in dealing with young mothers in the care of their families. A more familiar picture cannot be presented to the general practitioner's eye than a young mother, pale, weak, emaciating, in broken spirits, dragging herself around from a sense of duty, utterly unfit to do one-quarter of the work she performs. We often see this condition, after the first child, in such women. Whereas in other and stronger women, who renew their nervous energy quickly, it is observed that such a neurasthenic condition does not supervene until after several children have been born.

In a precisely similar manner do we see one woman developing a neurasthenia within, say, twelve months after her first confinement, and another woman succumbing to it not until five or ten or more years after her first confinement, when her perinæum was lacerated. In the case of the latter, the influence and bearing of a perinæal laceration seem to the majority of physicians to be so remote that at first thought its consideration rarely receives justice. It is to this consideration

that particular attention is called because the relation between neurasthenia and such lacerations is made so conspicuous by the fact that perinæorrhaphy produces such fine results. In my mind, no doubt exists as to this relationship. It is a matter of such forceful plainness that the greatest surprise exists that the treatises on gynæcology rarely mention it. Any one at all interested in looking up the subject will verify this remark. I have examined numerous works for this point, all published since 1890, and in not one is it mentioned. Several authors go so far as to say that the results of laceration of the perinæum are rectocele, cystocele, enterocele, and subinvolution of the vagina. But of its effect on the nervous system, not one word is written. When a physician once falls in the way of associating these two conditions, he will see it very frequently. He will see one of the causative factors of depraved health in women that seems so simple and so exceedingly plain his astonishment in overlooking it in the past will be great. Indeed, in time, when he encounters a case of neurasthenia in a parous woman, one of the first points investigated will be her perinæum.

And right at this point a protest is entered most emphatically against wrongly attributing to a minor perinæal laceration the power of producing this profound nervous invasion. Any doubting Thomas can say he performed a perinæorrhaphy on a neurasthenic woman, and that his patient has not been improved thereby in the slightest, and I can quite agree with his assumed cynicism. In such a case, the fault is not with that perinæum nor with the neurasthenia: It resides in the doubting Thomas. He has taken a case to illustrate his point that is not at all included in this article.

This leads to the inquiry, "How is one to know when a perinæum is sufficiently lacerated to be ranked with lacerations that can produce neurasthenia?" In a general way, it may be detected in the following manner: The patient is placed on her back at the end of the table with her knees elevated and separated, the physician sitting directly in front of her. Often a dashboard perinæum will be seen—one where the body of the perinæum is lacerated but its skin is intact. Without touching it, he will say, "This perinæum is not lacerated." His deception will soon disappear, if he will follow a routine method of examination of all such cases.

In the first place, the labia should be separated with the two thumbs of the physician and the patient told to take a deep inspiration and bear down. If the body of the perinæum be torn through, the patient will make both the bladder and the rectum come down into and through, to a greater or less extent, the vulvar orifice—a feat wholly

impossible where the perinæal body is not torn through. Secondly, the physician should introduce his finger into the anus and draw forward the perinæum out of the vulva, when the depth and extent of the laceration of the perinæal body will become apparent by the thinness of the tissues pulled forward by his finger. Where the body is torn through the tissues thus drawn out by the finger will be only the posterior vaginal wall and the anterior rectal wall. A little practice and intelligent observation will reveal to the physician thus examining for laceration of the perinæum when to decide that it is only a minor laceration or a laceration that has ruined the perinæal body completely.

These manipulations in examining are indispensable to making a reliable diagnosis in many cases. Very many women will so contract their muscles under the exposure and embarrassment of such an examination that an investigation without these manipulations will be utterly misleading. Therefore, they cannot be insisted on too emphatically. I have demonstrated by these means, against their protest, to physicians, times without number almost, that their patients did have serious perinæal lacerations.

Examining for perinæal lacerations, without exposing the parts to full view is most unsatisfactory and misleading. Digital examination without the aid of vision is totally inadequate in all cases.

It cannot be too strenuously urged that one of the best methods of showing that a damaging laceration exists is to have the patient, after taking a full inspiration, make a strong bearing-down effort. Such a demonstration of the destroyed integrity of the pelvic floor is invaluable in determining the full damage done to the patient's perinæum. When it can be shown that a woman's bladder and rectum can be so easily displaced downward, no further doubt can exist as to the necessity for surgery to cure her.

Pertinent to the argument herein contained is this fact, that the writer desires to impress: *A continued local irritation can produce, reflexly and directly, a breaking of the nervous balance, with its exhaustion of the nervous energy sufficient to induce the neurasthenic state, with its evil consequences.*

Let us see the bearing of this statement in lacerated perinæum patients. What is the "local irritation" with them?

An inquiry into the vascular supply of the pelvis and the effect on it of a lacerated perinæum, reveals much. It shows us that the venous supply is very profuse. The arteries are few and simple. The veins are numerous, complicated, and much given to presenting to us the peculiarities we call "plexuses." In no other cavity of the body do

we see this fact so fully illustrated as we see it in the pelvis. The cranial cavity, the thoracic cavity and the abdominal cavity present no portionately corresponding numbers of plexuses as we find in the pelvis. Each organ has its venous plexus, such as the uterine plexuses, the broad ligament (ovarian and tubal) plexuses and the rectal plexus. Even the very entrance to the pelvis, the vulva, is supplied with a plexus.

The branches of these plexuses can present a condition of varix. Varicocele of the broad ligament is a common condition. The curious fact exists that varicocele in a man would seem to be more easily explained than in a woman, because a man's spermatic veins, eventually merge into one trunk, which pursues a perpendicular course, whereas a woman's pampiniform plexus pursues a horizontal course. In the latter it is frequently encountered without the existence of ovarian and uterine growths. The veins can attain to a great size, so that in the aggregate they will be as large as a hen's egg. I have repeatedly seen single varices of the pampiniform plexus larger than a man's thumb. The walls of these veins are often thickened and contain phleboliths. This plexus lies in the broad ligament, between its two layers without any pressure being exerted on its lateral surfaces, which may account, partially at least, for a portion of the cause of varices appearing in it.

Varices of the broad ligaments are well known and are described in the text-books. But varices in other pelvic organs—barring those of the vulva—are not so often written about. But they *do* occur. They are not so easily demonstrated as are the broad ligament varices, because they are not so easily and so often exposed. Therefore, they are not so well known. Indeed, they are chiefly known and demonstrated by *post-mortem* vascular injections. For that reason we hear little of them.

Varices of the vaginal and rectal plexuses of veins are easily produced by the major lacerations of the perinæum, not including the complete lacerations. Such lacerations divide the pelvic floor, *i. e.*, levator ani muscle and the two layers of the pelvic fascia. These are the principal tissues involved in incomplete lacerations. The effect of such a tear is usually described as being a rectocele, a cystocele, vaginal wall subinvolution, uterine displacement and flexion, prolapsus and a painful tension on the utero-sacral and broad ligaments. One would think that the patient has quite enough bad results to contend with. That is promptly conceded where such a bouquet of baleful sequelæ appears. No contention over such a patient is courted. The rather, it

is not such patients that I refer to. The ones referred to are those who are not cursed with such an utter lack of normal positions of the parts involved. They are the patients so often declared by their attending physicians not to have perinæal lacerations, yet who are neurasthenic women. They are women who have been told by physicians that no child-birth lacerations exist in them.

The effect, reflexly, on a woman of the varicose condition of her vaginal and rectal plexuses arising from perinæal tears is decided and often destructive of her nervous system's integrity. It would seem that the system or systems of her organism that are most sensitive will be the most readily affected. In by far the large majority of such patients we see the digestive system breaking down first. This leads, in time, to deficient sanguification. This introduces anæmia, sooner or later, with its protean evils. The brain and spinal cord soon voice their partial starvation by an exaggeration of the reflexes. Endurance is diminished. Fatigue comes on easily. Insomnia often appears. Altogether the once sound woman becomes a wreck sooner or later.

The beginning of the digestion failure is usually found in the stomach. One can confirm this fact by very carefully eliciting the history of the digestion. Gastric fermentation, with its gas and acid excesses, will be found to appear first oftener than constipation appears first. Unless special attention be given to examining for this item of information in say, at least one hundred consecutive cases, it will not be especially impressed on one's mind. The common impression is that constipation appears first, because of the loss of the support of the anterior rectal wall. Careful observation will correct such an impression. This loss of the stomach's power to digest perfectly exhibits the deficient innervation of that organ. This phenomenon may be present for a brief space of time at first. Then follows a return of good digestion again, only to be followed by another spell of indigestion for a time. Thus, alternately, the two succeed each other, the dyspepsia, in the end, becoming fixed and unroutable. In time, the entire digestive tract becomes involved and disorder reigns supreme.

Thereafter will follow, without fixed order, the multiform manifestations of nervous exhaustion. The patient may find it difficult to fix her attention. A painful effort of the will is necessary to arouse her to perform her domestic duties. Amnesia, queer sensations in the head, loss of spirits or mental depression may develop. Weakness of sight, eye-strain, that everlastingly present new symptom of reflex trouble so recently introduced by our brethren, the oculists, is often encountered. Disturbances of the circulation, like excessive blushing,

flushings, occasional pallors, and cold extremities are often presented. Palpitation of the heart, and exaggerated beating of the abdominal aorta are very common. Great quickness of the pulse is far from rare. Night-sweats, feet and hands bathed in sweat, itching and formication are often presented. Superficial neuralgias and violent cephalagias often render life unbearable. In time, a fully-developed condition of neurasthenia will be presented. Each case will develop its own symptoms.

Occasionally some other system of the organism breaks down first, as the circulatory or the nervous system. The manifestations of such demoralization follow no fixed sequential order. Indeed, patients can scarcely tell just what symptoms appeared first.

The irritation or worry of the nervous system through the venous congestion of the pelvis in such a case is so insidious and persistent that the patient cannot always describe her first symptoms. She usually winds up her description by declaring "that she has not been well since she began to bear children."

It is quite needless to present here illustrations of well-established reflexes. They are too commonly known.

Only a few cases are herewith presented for illustration. Embarrassment is experienced in selecting from a large number. Three or four cases answer as well as scores of them.

Case I.—Married woman, confined six, five, and three years ago. Never well since first delivery. Always well before it. Was so irritable her family could scarcely live with her. Almost totally unable to perform her household duties. She had gastric and intestinal dyspepsia, with constipation. She had neuralgia much of the time. Hæmoglobin was seventy per cent. of the normal. The urates were present in large quantities. Much cardiac palpitation with the neurasthenic aorta was a source of great nervousness. She was so nervous she could not bear her best friends, and almost totally withdrew from social relations. This is the briefest possible account of her pitiable condition outside of her pelvis.

Examination showed an absence of her perinæal body, a mild degree of metritis with cervical lacerations, a moderate cystocele and rectocele. The condition of her rectum was what led her to consult a physician. The necessary plastic operations were performed and in six months her health state was completely changed. Her neurasthenic symptoms, barring an occasional headache, had all departed.

Case II.—Married woman, had been confined five and three years before. From being a strong, self-reliant woman, who could do and

endure anything, she presented a condition of general hyperesthesia and such an intolerance of noises that her children nearly drove her distracted. Her mental condition had become a source of gravest alarm to her family and friends. These were the chief symptoms of her neurasthenic condition. Her hæmoglobin registered eighty per cent. of a normal supply, and her urinary solids had decreased to five hundred grains, when they should have been about nine hundred.

There were moderate lacerations of the cervix and about four-fifths of the perinæal body were absent. Six months after the necessary operations were performed, she had fully regained her health of body and mind in every particular.

Case III.—Married woman of thirty-eight years of age. She had borne six children in eighteen years. Had been in delicate health for about seven years and had tried about every school of medicine and climate. She grew progressively weaker continually.

For her neurasthenia she went to one of the best rest cure establishments in America. While there I saw and examined her, finding, among other conditions, no perinæal body whatever, proctocele and cystocele. Her circulatory and digestive systems gave her the most trouble. Violent and long-sustained palpitations had worn her out times without number. Her stomach was so given over to ejecting all meals that she had rectal alimentation for many weeks consecutively. In the previous year she had lost over sixty pounds in weight. Insomnia was added to her other troubles.

A great change took place in her within four weeks after the needed plastic operation on her perinæum. All food was retained and a continual hunger was upon her. Two months later she called on me, and her large category of evil symptoms had utterly disappeared. Among other items of information given to me was one to the effect that at one time since her operation she had gained in weight a pound a day.

In conclusion, it is desired to insist that a huge fact exists in this claim. Gynæcologists, neurologists, oculists and general practitioners are all vastly interested in understanding this matter. They are all encountering it daily. They fail in curing very many neurasthenic women because they do not consult the perinæum often enough.

The fact that the period between this accident of parturition and the first manifestation of neurasthenia is so very elastic is especially emphasized. Although referred to before in this article, it will bear repetition. When once it takes a firm hold of a physician's mind in investigating cases of neurasthenic parous women, it so often brings him a satisfying relief in his inquiries that he will be more than repaid for his pains.

THE QUESTION OF PELVIC SUPPORT.*

By Joseph Eastman, M.D., Indianapolis.

Truth is stranger than fiction; and, as in the scarcity of gold and diamonds lies the essential element of their value, so the scarcity of truth magnifies its value when secured. The language of Holy Writ is still to us an inspiration, "Seek and ye shall find." All truly valuable progress is in direction from the complex to the simple, from the useless to the useful, from the false to the true.

In the evening twilight of the year and century, may we not profitably take an invoice to determine what we have in stock worth carrying forward to coming years or coming centuries; and, if, perchance, we shall see our idol falling, let us have consolation in the thought that "we have written as those who love humanity." Many of us can count by the score our patients whose pelves are minus ovaries and tubes; a few of us can count by the hundreds our patients whose pelvic organs have been reduced in number until nothing but bladder, ureters and rectum remain. May we not well inquire what means and methods have best borne the test of time (which proves all things), and left the pelvic viscera in so nearly normal position as to give in greatest measure pelvic strength and pelvic support to the remaining organs?

When about nine years ago I had occasion to re-open an abdomen ten months after I had removed a large fibroid tumor (in which case I had used a serre-nœud and adjusted the pedicle in the lower angle of the wound),I found that what was considerable of a pedicle at the first operation had been reduced to a string not larger than a pencil, composed of peritonæum enveloping a small amount of connective tissue, and even this had been broken by a sudden strain which the woman received while driving a buggy over a railroad crossing. While this had given way, the vagina had been retained at full length for such a time that the broad ligments maintained a good support to the vagina, and recent examinations disclosed the fact that the patient, though a hard-working farmer's wife, now sixty years of age, has neither rectocele nor cystocele. In my earlier experience with panhysterectomy, the case which I just reported was continually in mind, and I made every effort to retain the vagina at full length by securing its union with broad ligaments. Notwithstanding this, as my patients

* Read by invitation before the Philadelphia Obstetrical Society, December 2, 1897.

have grown older, I find shortened vagina, and in many cases resulting cystocele, vesical tenesmus, or rectocele with lack of expulsive power in the lower portion of the rectum.

In many cases where I have first secured the uterine arteries and made a supra-vaginal amputation of the cervix, I have made effort to stitch cervix together and give it as much attachment to the broad ligaments as possible, to avoid shortening the vagina and resulting cystocele and rectocele. Surgeons who have visited my operating-room and lookers-on, when operating before medical societies, have asked, "Why use suture at all in the cervix," saying, "if let alone it would retract," as the turtle retracts its head into its shell. I have but one answer to such quesions, and that is, this retraction of the cervix is caused by a contracting and shortened vagina, and I desire to have the patient's bladder and rectum held up as nearly in normal position as possible. It took the first half of the century to put ovariotomy on an everlasting foundation. The removal of fibroid tumors has in twenty years, not only become a recognized operation, but hysterectomy has to-day, if anything, a lower mortality than ovariotomy. Let us reason together: The brave woman who has to give up her womb surely is entitled to the method which leaves her pelvis the strongest and least impairs the function of remaining viscera.

With these statements in mind and some experience to sustain our views, it might seem that ventral-fixation of the pedicle and a return to the serre-nœud of elastic ligature, would give better pelvic support. In a large per cent. of cases I believe this to be true, and believe that those who have opened the abdomen at a later period after fixation of the pedicle in the abdominal wound, have found nothing but a string remaining and in some instances that string broken. There are other advantages which I might digress enough to mention; mainly, that the two wounds, one pelvic, the other abdominal, are united in one; and if the serre-nœud is never tightened after the patient leaves the operating-table, there is no more danger of infection from the stump than from an abdominal suture, which is not twisted and tightened, and irritated by such daily twisting and tightening.

Twelve years ago I began doing vaginal hysterectomy for cancer, pelvic inflammation, and for cases of complete procidentia. In my first five efforts I used the dorsal position and either clamped with ordinary large hæmastats or ligated with silk, paying little or no attention to the attachment of the vagina to the broad ligaments for the purpose of preventing vaginal shortening and resulting cystocele In examining one of these patients from whom I had removed the uterus

for complete prolapse, I found decided shortening of the vagina with large rectocele and cystocele to the extent that the patient never completely emptied the bladder, suffering so much from vesical tenesmus that she expressed herself as having been more comfortable when her womb was "out in the world." Emmet's operation on the perinæum and Stoltz's operation for the cystocele have rendered her comparatively comfortable. With these object lessons in mind, in cases of complete procidentia, instead of vaginal hysterectomy, I have made a modification of the operation devised by Mackenrodt, making a longitudinal incision in the anterior vaginal wall from a point one inch back of the urethra down to the uterine cervix; then going through the utero-vesical space into the peritonæal cavity, bringing the uterus forward to a position of complete anti-version and stitching it with silver wire, following up with the Emmet operation, which deals with the perinæum from the vaginal side. The results thus far have been very satisfactory, and, as I believe, if we limit its use to cases past the menopause, make a field for the Mackenrodt operation, which seems otherwise to have been doomed because of the bad results when pregnancy occurred.

Since 1886, whether using ligature or clamp in vaginal hysterectomy, I have taken pains to narrow and round the broad ligaments by a constricting ligature, not only dragging them forcibly down into the vaginal wound, but dragging the vagina upward as much as possible by suture as indicated on the photograph. I have, in most cases, found, by examination a year later, vagina drawn upward with a depression on each side where broad ligament has retracted. Where I have been compelled to leave the pelvic wound open packed with gauze a year or so later cystocele and rectocele have been found.

In vaginal hysterectomy I am careful not to drag the uterus down into my light, but crowd it off to one side while dealing with the broad ligament; always using the Sim's position (first having the rectum dilated so as to give us the largest amount of space). Thus, by this position, all the pelvic organs are on a traction upward, while the operation is being made, the whole procedure being diametrically opposite to the French method, which turns the vagina nearly wrong side out, shortens it one-third its length, then holds up the intestines with gauze instead of closing the wound, thus paving the way for cystocele and rectocele.*

* Jacobs, after returning to Paris, ties off his forceps with silk bought in Philadelphia, and closes his wound in some cases.—Personal communication, Dr. Palmer Dudley, N. Y.

In not less than one-half dozen cases of retroversion with more or less accompanying prolapse, I have sought to overcome the disorder by the so-called ventral-fixation using three silk sutures passed through the posterior wall of the uterus and including at times the sheath of recti muscle, the subserous areolar tissue and peritonæum. Examining these patients two or three years later, I find the uterus prolapsed and retroverted as badly as ever, and in one case where it became necessary to open the abdomen I found little evidence of any suspending ligament remaining. In very many operations in the peritoneal cavity for intestinal obstruction due to strangulating bands, we find that these bands are continually being elongated by the floating about of the ever-moving intestines. In each act of *inspiration* and *expiration* anything attached to the abdominal wall will be alternately stretched and relaxed so that ultimately it will become elongated to a mere strand and amount to nothing by way of supporting uterus and other pelvic organs. In confirmation of this statement report the following case.

Some two years ago I gave the method suggested by Thomas Keith a fair trial. I lifted the retroverted and prolapsed uterus by the ovary and tube, and as much of the broad ligament as I could drag up into the abdominal wound, fastening it there by suture and clamp, removing the ovary and outer end of the tube. A year later the patient returned with uterus as much prolapsed and retroverted as ever. I reopened the abdomen, found the suspensory ligament, which I had made out of the mesovarium and fallopian tube very much relaxed, permitting the greatest freedom of descent and retroversion of the uterus. It may be said that the uterus held up for a time by ventral fixation, may relieve the patient of pelvic tenesmus. I would only answer that it can be claimed that the Hodge-Smith pessary has done all this, with more benefit and less danger to the patient and *is in evidence* that a *good* and beneficent means of relieving suffering originated in Philadelphia.

In many cases where I have removed ovaries and tubes and found accompanying retroversion, I have taken loop in the round ligament, thus shortening it, and for a time at least maintaining the proper axis of the uterus to that of the vagina. In this way I believe I have avoided the pain which continues in some cases for months, where the uterus sags backward, producing traction upon the pedicle.

Not wishing to digress from the subject of pelvic strength in women who have had to give up pelvic organs, I would say that the whole uterus contributes in no small degree to pelvic strength, even in

cases where the adnexæ have been removed, and I cannot allow to go unchallenged the statement that the uterus is no longer of any use after ovaries and tubes have been removed. In not less than twenty per cent. of my cases menstruation has continued after removal of the ovaries and tubes. I believe that Mr. Tait concedes that it has continued in fifteen per cent. of his cases; therefore, in a considerable per cent. of cases the senile changes which occur at the menopause, when precipitated by an operation, are avoided; menstruation in these cases is evidence of pelvic life, and pelvic life means pelvic strength and pelvic strength often contributes to a healthy body and a healthy state of mind. Oh, the pitiful mental and physical wrecks, wafted to the gynæcological shores from the great ocean of life—wrecks which have gone down beneath the surging waves of unsubdued passion and unrequited love! Shall love be more or less requited when the wife has no passion to subdue? What wrecks are being wafted from the ocean of surgical aggression to the tender mercies of the family physician; let him answer for our instruction.

I have removed spleens, kidneys, gall-bladders, wombs, ovaries and fallopian tubes, always feeling after such effort that not quite a whole being is left, and am of the opinion that it should be a surgical law to remove no organ (except the vermiform appendix), unless the same be incurably diseased, and with diseased ovaries and tubes removed, the uterus in most cases by proper treatment can be saved to occupy its position as the keystone in the pelvic arch, maintaining its proper axis to that of the vagina, lifting up rather than weighting down.

When a woman places her confidence in the operator who has said to her that, "she owes it to her family to submit to a formidable operation in order that she may be restored to health and happiness," she often displays a heroism such as only a woman believing that she is acting in the interests of her home is capable of showing. The history of the world gives few examples of self-sacrifice and heroism such as the surgeon often finds in his womanly patients:

> So near to grandeur is their dust,
> So nigh to God is man,
> When duty whispers, low, "Thou must";
> Their hearts respond, "I can."

Much is due these self-sacrificing beings. By all the hallowed memories which cling to the words mother, wife, sister or daughter, let us resolve and ask high heaven to record the vow that we will submit no woman to an unnecessary operation nor avoidable mutilation, and

that while during no operation will we remove a single organ which she might be permitted to retain:

> All are but parts of one stupendous whole,
> Whose body nature is, and God's the soul.

Some of these poor suffering creatures come to us in their desperation, demanding relief by surgery and it may, and often does become our solemn duty to reflect, "If this were my own wife, sister or daughter, would we do this operation or feed the nerve cells with a view of increasing her tolerance of pain?" The uterus, something like the parrot, will do the talking for every organ of the body and mimic every disease in the encyclopædia of pathology. The pelvic organs are as dials upon which are expressed the ills of the entire body in many of the neuroses. How few of us can positively differentiate between profound neurasthenia expressing itself in the pelvis and diseased pelvic organs causing and maintaining profound neurasthenia?

I have written this paper not for the purpose of inviting approval from this learned body nor in the spirit of the iconoclast but rather with the view of eliciting discussion; discussion, in which I may be the attentive pupil, anxious and willing to be instructed. In short, it was not written to please others but to please myself.

We have sent forth a good deal of Seidlitz powder literature; literature which, read by the surgical aspirant, is as fuel to the fires of surgical aggression. While I have the utmost admiration for the bold surgeon, and think the very acme of the world's heroism was attained when Mrs. Crawford clasped hands with McDowell, and made her leap for life, my admiration for the bold surgeon warms into fervent flame of love when I learn that his boldness is always tempered by wisdom, and his conscience holds him firmly to the golden rule: "Whatsoever ye would that men should do unto you, do ye even so unto them."

We must never allow the glare of surgical triumph to swerve us from the line of duty to a fellow-being. In the beginning of our special work, many operations were new and untried; many things were published to the world which had not been tested in the crucible of time and truth.

> Had we but sought for truth, with all the zeal we sought for fame,
> We had been wiser in our day, and left a loftier name.

A NEW OPERATION FOR VENTRAL FIXATION OF THE UTERUS.*

By Franklin H. Martin, M.D.,

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The operation which I have the honor to describe as a new operation for ventral fixation of the uterus, is the outcome of my experience with the Fowler operation, which consists essentially of suspending the uterus upon the urachus.

I was led to adopt the operation of Fowler's, with one or two unimportant alterations, because it furnishes a very effectual method of fixing the uterus without the necessity of depending upon any form of fixation suture, either of a temporary or permanent character, and also because it makes it unnecessary to depend upon an uncertain adhesion between the uterus and the abdominal parietes.

It has become pretty well established that these adhesions cannot be depended upon to remain permanent unless they are reinforced by a permanent suture of silk, silkworm-gut, or silver. Catgut, therefore, because of its unendurable nature, has almost been abandoned for ventral fixation because of the uncertainties of the adhesion after the catgut has disappeared. All operations, too, in which ventral fixations of the uterus have been attempted by means of sutures which have been placed so that they could be subsequently removed have been unsatisfactory because of frequent relapses, owing to the adhesions becoming absorbed or separated after the supporting sutures were finally removed.

This, therefore, had left on our hands an operation which required for its accomplishment the use of the permanent suture of silk or silkworm-gut. In a small, but definite, percentage of these cases the sutures produced serious irritation, and subsequently became the causes of fistulous tracts and a prolonged and undesirable convalescence.

For this reason I hailed with satisfaction the Fowler operation, and in its employment I was gratified to find it a very simple and quick

* Read before the Chicago Gynæcological Society, November 19, 1897.

operation to perform, and that its results were of necessity permanent.

I will now give a description of this ingenious operation in Professor Fowler's own words, quoted from his article in the *New York Medical Journal* for October 5, 1895, and afterward give my reasons for modifying it and my method of procedure.

"The operation consists essentially in making use of the superior ligament of the bladder for the purpose of forming an artificial utero-ventral ligament. This prominent fold of peritonæum extends from the summit of the bladder to the umbilicus, and encloses the urachus and the obliterated hypogastric arteries. The urachus itself consists of a strong fibro-muscular impervious cord, which at its central portion averages eight millimeters in circumference and represents that portion of the allantoic vesicle which remains after the formation of the bladder. It is narrowest at the umbilicus and broadest at its attachment to the bladder. The procedure is carried out as follows: The usual median abdominal incision is made, and the urachus identified as it passes close to the edge of the peritonæal incision upon the right side. Its upper extremity is cut directly across, and the cord, together with a ribbon-shaped strip of the peritonæum about one centimeter wide, is detached by dissecting it loose with the scissors down to the level of the lower angle of the abdominal wound.

"The uterus is then brought up in position and a Cleveland ligature carrier passed beneath its serous and subserous connective tissue investment at a point upon the posterior aspect of the fundus. The point of the ligature carrier emerges about a centimeter from the place of entrance, its jaws are opened and made to grasp the free end of the ribbon of peritonæum containing the urachus, and this is drawn through the opening made by the ligature carrier by tightening its jaws and withdrawing the latter. The urachus is replaced and secured in position by being included in the layer of sutures which close the peritonæal cavity."—New York Medical Journal, Oct. 5, 1895.

This operation I consider a very superior method of accomplishing ventral fixation and have done it, with the most complete satisfaction, in seventy-one cases in which the appendages were removed, or when, for other reasons, subsequent pregnancy was out of the question. As the urachus is a subperitonæal structure, as it is directly attached to the top of the bladder, it makes a fixation which is only applicable to cases where pregnancy is not possible, because of the depth and solidity of the ligament. In about 25 per cent. of the cases in which I have sought the urachus it was absent, or divided into several small subdivisions of no importance. The urachus, too, in a small

percentage of cases remains pervious from its bladder end, and, under these circumstances, it would not seem wise to employ it as a suspensory ligament. These difficulties with the urachus has led me to abandon its use and substitute for it a strip of peritonæum, which I consider a distinct advance, and which I will now describe as a new operation.

Description of Operation.

This modification of mine I have performed in twenty-six cases, and is, I consider, an important evolution of Fowler's operation. I have finally adopted the operation as a routine in cases demanding a ventral fixation in preference to all other methods: First, because of its simplicity and ease of accomplishment; second, because of the thoroughness of the fixation; third, because it positively does away with any form of permanent buried sutures; fourth, because it accomplishes fixation without the necessity of depending upon the uncertainties of unnatural adhesions; fifth, because it accomplishes a fixation which allows of a large range of movability; sixth, because the fixation does not directly involve the appendages; seventh, because experience demonstrates that the point of fixation is not the source of subsequent irritation or pain; eighth, because of the possibility of pregnancy occurring and going on to normal confinement after the operation.

The technique of this operation is very simple. It is performed in the same manner whether the appendages are removed or remain intact. The abdomen is opened with patient in Trendelenberg's position with a median incision three inches in length, extending from four centimeters below the umbilicus to about six above the symphysis pubis. The uterus is carefully freed from all adhesions of every kind well down to the Douglas's pouch. The posterior surface of the broad ligaments are also carefully freed from any fixation. The uterus is then brought well forward with its fundus pressed upon the parietal peritonæum just beneath the lower end of the abdominal incision. From one side of the abdominal incision, and parallel to it, a ribbon of peritonæum, with its subperitonæal connective tissue about one and one-half to two centimeters in width, with one edge of it corresponding to the free edge of the abdominal incision, is rapidly dissected free with the scissors or a knife; the end of this ribbon corresponding to the upper end of the wound is severed and the lower attached end is dissected down until it extends beneath the lower angle of the incision. This prepares a firm band of peritonæal and subperitonæal tissue about one and one-half to two centimeters in width, about three inches in

length, with an attachment to the peritonæum beneath the lower angle of the wound, in the median line directly over the fundus of the uterus. The uterus is now supported well forward with two fingers of the left hand of the operator, a Cleveland ligature carrier is made to transfix the fundus just posterior to its crest in a direction from behind forward to a depth of two millimeters and a width of grasp of one to two centimeters. After the blades of the carrier have penetrated well through the tissue, they are opened to the extent of five millimeters, and they are made to grasp the free end of the peritonæal ribbon, and then to draw it through the opening made. The uterus is now pushed well forward on the ligament until it is arrested by its lower fixed end, and then, by means of a small antiseptic catgut buried suture, the uterus is temporarily fixed. This catgut suture is passed through the aponeurosis, the muscle and the peritonæum on one side of the lower angle of the wound, then transversely through the peritonæal and subperitonæal coat of the uterus, just posterior to the point of exit of the new suspending peritonæal ligament, and finally passed to the peritonæum, muscle and aponeurosis of the opposite side of the abdominal wound and securely tied, thereby firmly fixing the uterus for a time corresponding to the life of the catgut, and until such a time as the new suspensory ligament will be securely fixed in the abdominal incision. The abdominal wound is closed up by a row of interrupted silkworm-gut sutures, including all tissues of the abdominal wall. After these sutures have been introduced, before they are tied, the upper, free end of the peritonæal ribbon, or suspensory ligament, is laid carefully in the middle of the abdominal incision, in such a position that its tissue will lie in contact with the fascia and muscle. The sutures are then tied so as to include the new ligament in the grasp of these tissues.

With due care in directing the convalescence of these patients, insisting that they remain quiet for at least four weeks, and that the wound be supported for several months later, there will seldom be a failure with this method of fixation.

The new ligament is made of tissue very susceptible to the formation of new nutrient relations. Throughout its entire length it is securely buried in the most succulent of tissues. There can be no question but that its integrity will be maintained.

The operation is much less cumbersome than my description of it. Like the Tait operation for restoring the perinæum, it can be done in much less time than one requires for describing it. It does not require more than one minute of additional time when done in connection with other operations.

Indications for the Operation.

This operation should be done in every case where it is necessary to open the abdomen in order to correct the malposition of a retroverted uterus. This includes all forms of adhesions or fixations of the uterus which cannot be overcome by systematic local stimulation and massage. It includes all cases where disease of the appendages is such, complicating a retrodisplaced uterus, that a lararotomy is necessary to remove or treat those diseased organs.

I believe that the operation should be done in all cases where it is necessary to remove the appendages of one or both sides, even if there has been no pre-existing retroversion, in order that the uterus, deprived of a portion of its lateral supports in the removal of the appendages, will not fall into lateral or retroversion and become adherent to the raw stumps. Especially would I recommend the suspension of the uterus by the method I have described after the removal of large ovarian cysts which are so frequently the cause of more or less procidentia of the uterus.

Many of these cases are in old women with senile atrophied uteri with lower supports stretched beyond repair.

Advantages of the New Operation.

1. Fixation is accomplished in two ways: (*a*) By adhesions of the uterus to the abdominal parieties beneath the buried ligament. (*b*) By suspension on a living suspensory ligament.

2. The fixation is not dependent upon uncertain adhesions alone, as when it is temporarily fixed with catgut, or by durable ligatures which are subsequently removed, nor is it dependent upon a durable buried ligature of silk, silkworm-gut or silver, which may at any time, early or late, become infected and give rise to well-known disagreeable results; on the other hand, it has a durable fixation by means of a living animal ligament which is a portion of the woman's own anatomy.

3. The fixation, including, as it does, the peritonæum and superitonæal tissue, only makes a suspension with a desirable range of movability. While it will allow the uterus a range of motion, it will maintain the crest of the fundus so far forward that the intra-abdominal pressure will always strike behind it and thereby keep the uterus anteverted. Pregnancy is not liable to be interfered with in the slightest by this fixation. The suspension is so superficial, too, that tension on the bladder need not be feared.

Results of New Operation.

The remote results of the Fowler operation, or the modification described by me cannot be recorded, because time enough has not elapsed since the first operations were performed to make such a report possible. The primary result is most satisfactory. The uterus remains painlessly fixed in all cases and in a considerable number of cases more than a year and a half has elapsed. The fixation is not only painless but it seems very durable. While the uterus possesses a large range of movability it is impossible to induce it to remain in a position of retroversion longer than it is being held. The elastic subperitonæal tissue to which it is suspended immediately draws it back into anteversion. The fact that the appendages, when remaining, are not included in the direct fixation is an advantage of importance in these operations. There has been no suppuration at the seat of fixation in any of my ninety-seven cases.

THE EXTENDED INDICATIONS AND MODIFIED TECHNIQUE OF THE ALQUIE-ALEXANDER-ADAMS OPERATION, WITH IMPORTANT ADJUNCTS.*

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The indications for shortening the round ligaments of the uterus by way of the inguinal canals are best set forth by stating certain general principles which apply to the operative cure of pathological retrodeviations of the fundus uteri in patients who retain any capacity for reproduction. These principles are, or certainly should be, generally accepted as axioms.

1. As a normal procedure, that operation for these displacements of the uterus and its adnexæ must be chosen, which does not interfere, but, if possible, will assist the specific feminine and highest uterine functions, *i. e.*, those pertaining to reproduction.

* Read before the Chicago Gynæcological Society, November 19, 1897.

2. Inasmuch as the treatment for these disorders is merely upon an indication of comfort or health (quoad valetudinem) and only in a very remote sense upon a vital indication (quoad vitam), no operation is permissible that, either in itself or through its complications or sequelæ, has any perceptible rate of mortality, or that materially disarranges the normal anatomy or transgresses upon the physiology of the female pelvic or abdominal organs.

3. Upon the indications mentioned, no operation is advisable that has frequent sequelæ of physical or mental pain or other subjective disorders, or whose good results are frequently or easily frustrated with or without the supervention of pregnancy and parturition.

4. Inasmuch as vagino and vesico-fixation of the uterus and also ventro-fixation of it, both by direct and indirect methods, do, each and every one of them, essentially violate the requirements of one or more of the above stated postulates, and inasmuch as we know from anatomical studies and abundant clinical experience that no such violation occurs from shortening the round ligaments of the uterus, for backward deviations of its longitudinal axis, therefore, we are constrained to accept the self-evident conclusion that the round ligaments of the uterus—whatever, if anything, be their function otherwise—are preeminently the structures to make use of, with certain exceptions, as a normal procedure and that of election, in surgical treatment of the disorders mentioned. Upon such premises I am compelled to insist that vagino-fixation and direct ventro-fixation of the uterus should be absolutely and totally abandoned in all cases that retain any capacity for reproduction; that vesico-fixation and mediate ventro-fixation (ventro-suspension) while admissible, are rarely indicated in such cases, because at best they create one abnormality for another and transgress upon physiology by endangering the normal function of adjacent viscera, and because their good results are inferior to those of other methods that are available in the majority of cases.

Accepting the round ligaments as the structures to work with, in the absence of occasional contra-indications, the next question is by which route shall we approach them? This may be done by vaginal cœliotomy, by ventral cœliotomy, and by way of the inguinal canals. The last of these routes gives by far the most stable results, and is much to be preferred (1) because it eliminates the weaker distal half of the tapering ligament, and brings its stronger portion only into requisition, and (2) because it does not depend upon loops of this cord, that are held by sutures which are in danger on the one hand of cutting out, and of cutting off its circulation on the other. The superiority of the in-

guinal over the two intraperitonæal modes of shortening these ligaments are such that F. W. Johnson, J. H. Kellogg and Edebohls adopt it, even when they have made a median ventral incision immediately preceding for other reasons.

Therefore, the general desirability is apparent from all sides of choosing the Alexander method in all cases where the conditions which are essential to that method can be secured.

These conditions are: *First*, that a mobility not less than of normal degree shall have been restored to both the uterus and its appendages when it was impaired or lost. The uterus, when completely anteverted, must not be drawn backward or downward by anything but gravitation.

But these causes of impaired mobility can be removed; and thereby the very large category of adherent retroversions and retroflexions can be redeemed to perfect eligibility for treatment by the Alexander method: (*a*) By pelvic massage; (*b*) by Schultze's forcible redressement in narcosis at the time of operation; (*c*) by means of posterior vaginal cœliotomy immediately preceding the Alexander operation; (*d*) by holding the uterus with one hand, after dilatation and curettement, by means of a size fourteen to sixteen, English sound, of such a length and uniform curve throughout as to form an arc of about one-quarter of a circle whose diameter is about 45 c. m., or with two fingers of one hand, most frequently, in the vagina without any instrument, and then breaking the adhesions and freeing the uterus with the index finger of the other hand introduced into the pelvis through the dilated internal inguinal ring of one side. And I have repeatedly done this very well, as Edebohls also says he has, with a finger through the inguinal ring alone without any vaginal manipulation. The *second* condition essential for success with this operation is that the sacro-uterine folds (retractores uteri) be not greatly elongated, and that the uterus be not in more than the first degree of descensus (prolapse). In either of these cases shortening the round ligaments would really be a suspension of the uterus by these structures that are too feeble for any such purpose, and are intended only to serve as balancing cords to guide the fundus forward, so that it will be held there by intra-abdominal pressure, after it has been temporarily crowded backward as by a full bladder or some other cause. In order that this periodical traction, on the part of the round ligaments, may be thus in a forward and not in an upward direction the weight of the uterus must be carried by other supports—chiefly the broad ligaments—and its lower pole must remain sufficiently retracted toward the sacral hollow by the sacro-uterine lig-

aments. Cases of marked descensus are better treated by ventro-suspension together with thorough plastic work upon the pelvic floor.

Thirdly Uteri that are large and heavy from fibroids, or exceptionally large chronic metritic uteri that are markedly retroflexed should not be treated by the Alexander method, because the center of gravity in such uteri falls from a point too far posteriorly to a line joining the points of origin of the round ligaments.

Fourthly. In comparatively rare cases of thickening and ainduration of the peritonæal and subperitonæal structures of the broad ligaments from former severe inflammatory processes the round ligaments cannot be made to slide well within the broad ligaments in order to secure a sufficient shortening. Such cases are generally associated with septic conglomerates in the adnexæ and require ventral or vaginal cœliotomy any way.

Aside from these infrequent exceptions, the Alexander operation is or can be made available and should certainly be chosen in the vast majority of these uterine displacements, particularly when they occur in females who menstruate, but also in some others; because it restores to the organs a perfectly physiological position or relationship. There is no "fixation" (a surgical misdemeanor) of anything; no displacement or interference with the bladder, ureters, or appendages; no pain from traction upon peritonæal structures; no possible interference with pregnancy and labor; no halter-strap, bridge or cleft between the uterus and abdominal wall to invite ileus or mental solicitude upon a knowledge of its presence. None of these! But instead thereof its anatomical and subjective results during recent years, since its devotees have learned when to choose it, how to prepare for it, and how to do it, are unequalled by those of any of its competitors. It is pre-eminently *the operation of the future.* This fact is furthermore made apparent by its susceptibility for extension to or combination with other important operative adjuncts which I stumbled upon, without a suggestion from any one three years ago. The first was the removal of a left tube and ovary through the internal inguinal ring which I had opened and dilated with forceps in tracing the round ligament, which for the first time I have been unable to find, from within outward. Incidentally, I discovered the worthless tube and ovary, that I should have diagnosed before, and took them out. This I have done on one side in numerous cases since then. But this practice led me to another expedient which covers a more valuable indication, namely, it enables us to discharge also that half of our entire duty in these entirely conservative cases, which pertains not to the uterus directly, but to

the appendages, and consists of freeing them from adhesions, opening tubes, resecting ovaries and suspending these which are so frequently descended and lie under or near the retroverted uterus, by shortening the external or proper suspensory ligaments of the ovaries. During the past year I have done the Alexander operation upon twenty-three patients, eight times without intraperitonæal work; five times with removal of one tube and ovary, and ten times with resection and suspension of usually the left ovary, through the dilated internal inguinal ring. In no case have these adjunct procedures seemed to make any considerable difference in the usually undisturbed and comfortable convalescence. However, the objection to this will be raised, more upon theoretical grounds than upon clinical experience, that I will induce inguinal herniæ by taking such liberty. To this I can answer, with good assurance, that out of an experience with not less than one hundred patients, during the past five years, I have yet to learn of the first sign of an actual or impending hernia. On the other hand, I have incidentally cured a few developed and many threatening ruptures.

On this point the technique of operating is of supreme importance. Unless we are working in an old and deep cicatrix, as I had to only once, we must *never cut anything* but skin, the fat under it and about 2 to 5 m. m. of cremasteric fibers at the lateral acute angle of the external inguinal ring. After that the entire anterior wall of the inguinal canal is opened, by splitting the aponeurosis of the external oblique muscle with fingers or some other blunt instrument, and is held aside with retractors. The ligament is traced in most instances from the tubercle of fat that projects from the external ring. When not found there it is picked up nearer to or at the internal ring with a bunch of the adjacent parts of internal oblique and transversalis muscles and isolated from them. The peritonæal investment is always opened in order to make a thorough and truly effective shortening of the round ligament, of ten or more c. m., possible. In closing the wound the principles of the Bassini operation for hernia are carefully adopted, together with that of suturing in tiers, with formalized and boiled catgut. Accordingly the peritonæal opening is first closed at its own level around the ligament well drawn out, so that when it recedes it will draw a cone of peritonæum inward. With the size 4 or 5 continuous catgut thread the parts of internal oblique and transversalis muscles that lie for about 2 c. m. above the closed internal ring are gathered up by the needle in masses about a cubic centimeter thick, then the drawn-out ligament is pierced near its center, and the needle is then made to grasp 1 or 2 m. m. of the lowest and internal or posterior part of Poupart's liga-

ment, its upper split edge having been everted by a forceps. Three to four more such stitches are made with a continuous thread and the external ring is arrived at, the thread is looped within itself as a substitute for a knot, and then the external ring and free edges of the important apeneurosis are separately and accurately reunited by a continuous suture outward and upward, and the thread is tied to its original end which projects from the wound. Skin and fat are closed continuously by subcutaneous fine catgut or over and over silkworm-gut sutures. The stitches in each succeeding tier are made to grasp a little of the preceding one often enough to prevent the forming of any dead spaces. The useless terminal, 4 to 6 inches of ligament, projecting above the closed external ring is excised. This manner of closure accomplishes the following important points:

1. Reconstruction of the posterior wall of the inguinal canal far outward.

2. Closure of the canal firmly, the round ligament being used to do this in part.

3. The ligament is anchored to an unyielding object, is made to lie as nearly as possible in its normal place and does not interfere with perfect reunion of the split edges of the aponeurosis in front of it, nor does it weaken this important structure, as by being woven into it or around its edges.

4. The circulation of the ligament is maintained by its being grasped each time together with a bundle of soft vascular muscle, as by a cushion.

The above technique is rationally borne out as a normal one, in view of important anatomical researches that have recently been made on this subject by O. Buettner, of Geneva; it is substantially the same as that now employed by Edebohls, and has given me good satisfaction for two years. Even when suppuration did occasionally supervene it has not marred the good final result.

Of course, to meet all the indications, every case that requires an Alexander operation also needs one or more other operations, if the patient shall recover fully from her pelvic ailments.

A curettement must always precede, and in most cases I do a thorough operation for repair of the pelvic floor, and sometimes also a Schroeder cervix operation, together with the round ligament operations in the same narcosis.

A detailed statement of results I must leave for another occasion. I will only say, summarily, that out of over one hundred cases there has been no death due to the operation. One woman, who should

never have been anæsthetized, died because of diabetes mellitus, owing to a most unfortunate mistake, *i. e.*, that the resident interne was given to examine the urine of another woman and reported upon that. I am aware of five recurrences of retroversion among my earlier cases when I did not prepare cases so well by massage, and used a much inferior technique. But from the last two and a half years I am not aware of any recurrence, and since I have discharged also my duty toward the adnexæ more fully by the adjunct operations which I will describe more in detail ere long, I have more satisfaction from these than any other gynæcological operation.

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AN IMPROVED METHOD OF DEALING WITH INTRALIGAMENTOUS CYSTS, WITH REPORT OF THREE CASES.*

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The treatment of intraligamentous cysts by the method ordinarily employed, and that is advised by the various text-books on gynæcology, is, to say the least, unsatisfactory. The splitting of the broad ligament, the enucleation of the cyst and the final stitching of the broad ligament to the abdominal incision, followed by the drainage of the denuded intraligamentous space formerly occupied by the cyst, is a most trying and dangerous procedure. The great liability to hæmorrhage, either at the time of operation or within a few hours after, and the risk of infection following the necessary continued drainage, are facts recognized, I believe, by all operators.

During the past year, Dr. Thomas H. Hawkins, my colleague at St. Anthony Hospital, and I have operated together upon three cases of intraligamentous cysts by doing a preliminary abdominal hysterectomy, a method, which to our knowledge, had not been previously re-

*Read at the Denver meeting of the Western Surgical and Gynæcological Association, December 28-29, 1897.

ported.* Pryor†, several years ago, published the description of a new and rapid method of dealing with intraligamentous fibromyomata, which procedure made easy the treatment of these previously formidable cases. The operation which I desire to describe is practically that detailed by Pryor, with the exception that the vagina is not opened, the uterus being amputated above its vaginal junction. By this method not only is the time of operation materially shortened but convalescence is rapid, and the danger of a permanent fistulous tract is avoided.

The Operation.—Immediately after opening the abdomen the ovarian artery, on the tumor side, should be ligated in the infundibulopelvic ligament. If the cyst is a very large one, a part of its contents should be withdrawn and the puncture closed by a pair of heavy pedicle forceps. The broad ligament on the free side is now cut between two ligatures, down to a point near the internal os. The anterior flap containing the bladder must now be made, and should consist of enough peritonæum from the anterior surface of the uterus to cover the stump of the cervix. A posterior flap of peritonæum such as is recommended, we never make, even in ordinary abdominal hysterectomies, as it simply consumes time and offers no apparent or real advantage over the single anterior flap. After completing this step, the uterine artery is found and ligated in the usual way. The uterus should now be amputated above the supra-vaginal junction, and the uterine artery on tumor side either ligated or clamped. Then, after elevating the amputated body of the uterus, the first and second fingers are insinuated between the folds of the broad ligament and the cyst is rapidly enucleated from below upward and the whole mass finally cut away. It is astonishing with what ease this can be done. As Pryor says regarding the fibromyomata, so I can say regarding the cyst, "It will come out of its bed as easy as a mandarin orange can be divested of its rind." There is absolutely no bleeding, as the arteries are all under

* In the Denver Medical Times of Nov. 1, 1897, Dr. Thomas H. Hawkins reported three cases of intraligamentous cysts operated upon by the method to be described, one of which was our first case, the one in which we perfected our detail. This we believe was the first published account of this method of treating intraligamentous cysts. While preparing this paper I notice in the New York Medical Journal, Nov. 20, 1897, a short synopsis of a paper read before the Southern Surgical and Gynæcological Society by Dr. Rufus B. Hall of Cincinnati, decribing a new method of treating intraligamentous cysts, which is not unlike the method we have been using.

† Medical News, December 1, 1894.

control. The final steps in the operation consists in trimming the broad ligament, leaving only sufficient peritonæum to make a good flap to cover over the denuded area. A narrow strip of sterile gauze is placed under the flap, the end of which is carried through the cervical canal into the vagina for drainage. The flap is finally held in place by a continuous catgut suture, which is also used to close in the anterior flap over the cervix. When finished the field of operation resembles very closely the appearance of the ordinary abdominal hysterectomy, save that the line of catgut sutures on the cyst side is a trifle longer than on the other.

The indications for this operation are:

1. A large intraligamentous cyst with extensive adhesions.

2. For all intraligamentous cysts occurring in women who have passed the child-bearing period.

3. In those cases in which there is a coexisting disease of the opposite ovary or tube, which demands their removal.

4. In cases complicated by grave uterine disease.

Case I. Mrs. G., aged thirty-six, admitted to St. Anthony's Hospital May 10. Diagnosis, a small fibroid in the anterior wall of the uterus, and a cyst on the right side. The patient was prepared and on May 18, assisted by Dr. Hawkins, the operation was performed. The abdomen was opened, and discovering the cyst on the right side to be intraligamentous, I thought best to enucleate it before removing the uterus. After splitting the broad ligament I found the tumor to be firmly adherent, and in my efforts to release it, not only tore the broad ligament extensively, but my finger also went through the wall of the cyst. The result was the fluid escaped, the tumor collapsed and the hæmorrhage was quite severe. Realizing that it would be a difficult matter to complete the operation as originally intended, and after discussing the matter with Dr. Hawkins, the method which I have outlined above was followed with happy results. The patient's convalescence was everything that could be desired. In the five days following the operation the temperature on but two occasions reached 100°. After five days the temperature gradually reached normal, where it remained during the entire convalescence.

Case II.—Mrs. M., aged forty-one, admitted to St. Anthony's Hospital, June 10, 1897, and placed under my care. Diagnosis, a large cystic growth on the right side. On June 19, assisted by Dr. Thomas H. Hawkins, we operated upon her. On opening the abdomen, the cyst, as in the other case, proved to be intraligamentous. Remembering our experience in the previous case, we immediately performed the

operation as outlined. Her convalescence was ideal, the temperature remained low, and at no time were there any serious symptoms, and the patient made a rapid and uninterrupted recovery.

Case III.—Mrs. C. was admitted to St. Anthony's Hospital on the 17th day of June as a patient of Dr. Hawkins. She had a large cystic growth in the pelvic cavity, much larger on the right side. On the 23d, Dr. Hawkins, assisted by me, performed a section, doing a hysterectomy and removing the cyst in the manner which I have before described. The growth and its contents, together with the uterus, weighed about fifteen pounds. The patient made a rapid recovery, and never experienced any special trouble in any way. She said, when leaving the hospital, that the operation had caused her less inconvenience than any of her previous confinements.

In closing this paper, I desire to summarize the advantages of this method of operating for intra-ligamentous cysts as follows:

1. The operation is practically bloodless.
2. The patient makes a quick recovery.
3. That there are no bad sequelæ.
4. That the mortality is reduced.
5. That it is a perfect operation.

California Building.

HYDATIFORM MOLE.*

By Robert A. Murray, M.D., New York.

Hydatids uteri, hydatiform mole, or, what is the better title, cystic degeneration of the chorion is a very infrequent disease of pregnancy. This rarity, and the absence of distinctive and diagnostic symptoms till the disease is advanced, and the subjects of it much debilitated by hæmorrhages or sepsis, prompts me to present this subject to-night, with deductions from five cases which I have observed.

No reliable statistics of the frequency of this condition exist. Hirst's "American System of Obstetrics" states that Mdme Boivin saw the disease only twice in 20,375 pregnancies, while in the Charity Hospital in Berlin it occurred four times in 2,130 pregnancies. Perhaps the latter is nearer the truth.

A disease, however, which affects the membranes early in preg-

* Read before the New York Obstetrical Society, December 14, 1897.

nancy would but rarely be seen in hospitals, as few cases extend to the full term of pregnancy.

The ætiology and pathology of this disease are very obscure, and apart from the knowledge that it more commonly affects multiparæ and those of advanced years, that it may repeat itself in successive pregnancies; also that it may be present in anæmic or cachectic conditions, syphilis, carcinoma, fibroids and possibly endometritis, we have very little certain knowledge. Some facts in the pathology have to be borne in mind to guide in diagnosis, and these we briefly state.

Cystic degeneration of the chorion occurs before the tenth week, before the formation of the placenta generally, and may involve the whole chorion, causing death of the fœtus, which is the usual condition, or rarely affects but a part, when the fœtus can develop, being sufficiently nourished by the unaffected part of the placenta, and be delivered alive at term.

When the cystic degeneration is rapid, the uterus grows to an enormous size, far out of proportion to the date of the pregnancy, the embryo dies, and frequently cannot be found in the mass of peculiarly striking sessile cysts.

From the latter fact it has been held by some that the vesicular mole is formed without pregnancy or from retained secundines of remote pregnancies. Both of these statements have been abundantly disproved, and now it is conceded by all that a conception is essential.

Another fact which has been described by competent pathologists, and which two of my cases illustrate, and which has an important bearing on the treatment of this affection is, that the disease may not be confined to the chorion or endo-chorion, but the cystic degeneration of the chorionic villi may pierce the decidua and involve the uterine wall, thinning, and in some cases, penetrating it, involving the peritonæum, and in one instance reported, a fatal result was caused by hæmorrhage into the peritonæal cavity.

The clinical picture presented in this disease usually has three features, though the absence of one or more often prevents a definite diagnosis. Rapid increase in the size of the uterus, surpassing what should be at the date of pregnancy, irregular discharge of blood, or bloody serum, and lastly, but much less frequently than the others, the presence in the flow of the characteristic vesicles. The earliest and most noteworthy symptom in my experience; in fact, the one which caused the patient to consult a physician, was irregular flow of blood or bloody serum; and it is also remarkable that only one of the five cases had a suspicion of pregnancy.

The uterus was enlarged in each case; in two patients the womb reached to the umbilicus, but in the others no increase in the size of the abdomen had been observed by the patients.

In only one case had any vesicles come away, and this patient thought they were remnants from an abortion.

If a patient have all the manifestations of early pregnancy, with rapid growth of uterus beyond the size of the presumable time of pregnancy, with bloody or serous discharges, and a broadened, flattened uterus, which is smooth and baggy to the touch bimanually; absence of the hard fœtal parts, ballottement, sounds of fœtal heart and movement, there is a very strong probability that there is cystic degeneration of the chorion; this cannot, however, be made positive till some of the vesicles are detached.

Hydramnion, syphilitic endometritis, cancer of the corpus uteri and fibroid may similate this disease.

In hydramnion the uterus is enlarged but regular, and does not feel baggy but tense to the touch.

A history of pregnancy can easily be obtained, the blood and serous discharges are not present, and the disease occurs later in pregnancy and no vesicles are obtained if there be discharge. Where the fœtus is not destroyed ballottement will discover it, or fœtal heart sounds and movement make the diagnosis positive.

A case of syphilitic endometritis, with enlarged subinvoluted uterus with profuse, watery and bloody discharge, in a cachectic patient, seen in consultation, was diagnosed from cystic degeneration of the chorion by the hardness of the uterus, and also by the passage of a curette into the uterus, and the absence of the characteristic vesicles. Pregnancy in a carcinomatous uterus can only give difficulty in diagnosis when the malignant disease is unrecognized in the cervix, the uterus does not grow rapidly and vesicles are absent in the flow.

Fibroids of the uterus has been the diagnosis in the two cases I have seen in consultation. The hardness, nodular character of the tumor in fibroids, the slowness in increase in uterine size, where the patient has been under observation; the absence of the baggy feel of the uterus, of the ordinary signs of pregnancy, and of the vesicles would render the true diagnosis certain. If pregnancy were present in a fibroid uterus and cystic degeneration of the chorion occurred, as it sometimes does, the differential diagnosis could not be made till some vesicles were detached naturally, or by the curette treatment.

Almost all obstetric authorities, recognizing that some cases of this disease go to full term, and also that there have been instances where

one twin has been born alive, the other being destroyed by the disease, have advocated an expectant plan unless the hæmorrhages and serous flow deteriorate the general health. When interference seemed imperative to avoid hæmorrhage, which is frequently serious, they advised the administration of large doses of ergot to excite uterine contractions, tamponing the vagina if necessary to control bleeding. Others advise tamponing the vagina first to soften the cervix, followed by ergot to expel the mass, aiding the expulsion by the introduction of the hand.

All authorities agree in keeping the uterus contracted thoroughly after the expulsion of the mass by the use of ergot freely.

It is not surprising that the death rate is estimated at thirteen per cent., when the dangers of sepsis and hæmorrhage are considered. The treatment I would advocate is that which has been followed in all of my cases, thoroughly aseptic, and, to my belief, the most conservative of life.

As soon as the diagnosis has been made the external parts and vagina should be made thoroughly aseptic by washing with green soap and douching with 2 to 6000 bichloride solution, or with creolin, lysol or other antiseptic in sufficient strength. If the patient have not been too weakened by hæmorrhage, the cervix should be dilated by dilators, Barnes's bags or better, manually, and the uterus should be immediately emptied by the hand, aided by detachment of adherent parts by the blunt curette. The curetting should be done carefully guided by the finger in the uterus, that no perforation take place through thinned portions of the uterus.

The uterus should then be tamponed with aseptic gauze, and a good compress and binder applied over the abdomen, the compress applied above the fundus not on it.

Where bleeding has been profuse and the uterus thin, the intrauterine douche has not been used, less rupture occur, but the aseptic tampon and aseptic operating has been relied on to prevent sepsis, every endeavor being made to save hæmorrhage and shock. Where oozing of blood has been moderate and the uterus not thin hot intrauterine douches of sterile water have caused the uterus to contract and the bleeding to cease.

Only by thoroughly examining the uterus internally by the finger can we be sure that the growth has not penetrated the wall of the uterus, and thus avoid perforation with the curette; again, by this means only can we take away all of the growth, and prevent recurrence, hæmorrhage and sepsis.

Where the patient is very weak through loss of blood, the vagina may be tamponed aseptically, and injections of salt solution into the tissues and rectum, with stimulants, should be given before operating, lest the shock from quickly emptying the uterus or bleeding cause a fatal collapse. I have not, in any of my cases, had to employ styptic solutions of iron, alum, or tannin, and consider that if styptic douching can be avoided, by getting firm contraction of the uterus by manual compression or the tampon, that septicæmia can be more surely prevented. In the cases where the uterine wall is invaded by the cystic degeneration of the villi, there is also great danger of formation of thrombi by the application of styptics, with disastrous results if moved into the general circulation or causing phlebitis, with danger to an already enervated, weakened patient. The five cases observed by me illustrate the former statements, and I will briefly narrate the salient points in their histories.

Case I.—Mrs. C., aged thirty-eight; seen in consultation with Dr. V.; multipara, VI.; four children alive; last pregnancy two years ago; been in bad health since; has not ceased menstruating since nursing last child, but during two months bloody and watery flow has been at irregular periods, particularly when exercising, rest in bed causing its arrest.

There is feeling of weight and dragging in the pelvis; the patient is anæmic and short-breathed.

Examination per vaginam showed extensive laceration of perinæum and cervix, uterus enlarged to the size of fourth month. Boggy to touch, serous and bloody discharge, cervix lacerated, soft, and on pressing the finger upward in its canal bloody flow, with a few vesicles, was discharged. The cervix was now dilated fully and the finger being introduced, the vesicular mass was felt.

Thorough disinfection of the vulva and vagina was now performed and the mass was detached by the finger, adherent parts being scraped off by the curette, uterus washed by intra-uterine douche of sterile water, ergot administered and uterus left firmly contracted. Antiseptic pads were kept in the vulva, and the case made a good recovery.

Case II.—Mrs. J., aged forty-three, VII.-para, last five years ago. Menses normal till three months ago, then at times slight bloody and serous flow on exercise, no nausea, vomiting, or other sign of pregnancy; thought she was undergoing the "change of life" until she noticed, about one month ago, the lower abdomen enlarging, and she consults me to know if she is pregnant.

The patient is anæmic, and, on closely questioning her, find that the

discharge has been profuse at times, making her weak. No odor to discharge. No history of malignant trouble in family Examination revealed a tumor, evidently; the uterus smooth, broader from side to side than usual, extending up to umbilicus, in a very large woman. No pain, but sense of distension. Per vaginam the uterus large, boggy; cervix softened, slightly patulous; no fœtal parts felt, ballottement negative, no fœtal movement or heart sounds.

The bleeding was made profuse by the examination, and an endeavor was made to dilate the os uteri with the finger; failing in this, the vagina was cleansed, then tamponed. In six hours patient felt some pains. Removing the tampon the os was found softened, dilatable, and with the finger inserted into the uterus, the characteristic vesicular mass was felt. This was grasped with forceps, removed, and the finger detached adherent parts. The bimanual examination showed the uterus very much thinned at the fundus, ragged endometrium at same point, and on withdrawing the finger a very profuse bleeding occurred, which threatened a fatal issue. While the uterus was held firmly by the hand of an assistant externally, it was carefully but quickly packed with sterile gauze and a firm compress applied to vulva and abdomen. Efforts at resuscitation with stimulants, depressing the head, and holding the arteries to the extremities in a short time brought the pulse to the wrist, but the patient was seriously weakened.

The tampon was gradually forced down and removed in three days. As the uterus was then quite contracted, ergot was given in moderate doses to continue contraction, hæmorrhage was arrested, and no odor was apparent in discharge. No fever appeared, but it was a long time before the patient regained her health and strength. The curette was not used in this case on account of the thinning of the uterine wall.

Case III.—Mrs. S. O'B., aged thirty-nine, multipara, six children, two miscarriages, menstruation normal and regular since abortion six months ago; no cessation or change; had profuse hæmorrhage and watery blood suddenly, after several small discharges which she had not noted till questioning; no pain. Abdominal examination showed uterus enlarged to about size of five months' pregnancy; the patient being very large and stout, had not noticed it.

Vaginal examination revealed a large, boggy uterus, as soft, patulous and dilatable. The endeavor to introduce the finger caused a profuse, serous and bloody discharge, in which were some characteristic vesicles. A small subperitonæal fibroid could be detected posteriorly. The os uteri was dilated with the finger gradually, the mass

separated and withdrawn by forceps, the uterus thoroughly explored, ergot was given to maintain contractions. Case recovered without fever.

Case IV.—Mrs. G., aged forty-two, multipara; no miscarriages; seen in consultation with Dr. V., who thought she had a uterine tumor from rapid enlargement of uterus and bloody flow. No suspicion of pregnancy, as menses had persisted and patient herself thought it was "change of life." Patient very anæmic.

Examination, bimanually, revealed a uterus enlarged to the sixth month, a dirty sanguineous oozing, no firm tumor, but only boggy feel to uterus, os uteri soft, patulous and dilatable. Passing finger into the uterus a cystic mass could be felt. As the bleeding was profuse the vagina was cleansed by a douche and then tamponed till the patient was in better condition and instruments obtained to empty the uterus.

After four hours of stimulation and feeding, the tampon was removed, the cervix, which had dilated, was still further dilated manually, the cystic mass which filled a basin was removed quickly, the bleeding was profuse, and there was much difficulty in removing small attached portions at the fundus and left cornua, the surface being left ragged.

The uterine wall was very thin. To restrain hæmorrhage, the uterus was grasped by hand on abdomen and compressed on hand inside uterus. Hot douches and hypodermics of ergot caused contraction, but a gauze packing was put in the uterus and the patient thoroughly bandaged.

In twenty-four hours the packing was removed, and the uterus contracted by ergot. Recovery normal.

Case V.—Mrs. McI., forty-six, came to me October 5, 1897. Said she had a tumor, and had been flowing for three months. Had been examined a week before by a physician in northern part of the city, who told her she had a fibroid tumor of the uterus. Fifteen years ago I had delivered her of her only child. No pregnancy since, menses normal and regular till four months ago. Since, every three or four days; she had worked hard and thought it was the menopause, made worse by being on her feet. She was very anæmic, had palpitation of heart and short breath, and had fainted a number of times suddenly during the previous week.

Examination showed an enlarged womb to the size of sixth month; boggy, not tender, no hardness of tumor, cervix soft, enlarged and patulous; finger firmly pressed through os, but could feel nothing. Bleeding followed the examination; the vagina was thoroughly cleansed and tamponed.

Next day tampon taken away, vagina cleansed by bichloride douche, cervix dilatable easily to size of two fingers and cystic mass easily felt.

The mass was removed in handfuls till a large basin was filled. The blunt curette was necessary to detach adherent pieces. The hæmorrhage was very profuse, the patient nearly succumbing; uterus cleansed by sterile douche, and packed.

She recovered, but for over a week had to lie absolutely flat, as the slightest movement brought on collapse.

From these cases we would deduce the following observations.

1. That women near the menopause who are irregular in menses should always be examined to determine the cause.

2. That the possibility of hydatiform mole being a cause of metrorrhagia and serous discharge should always be borne in mind.

3. That fibroids of the uterus may be present, yet the cause of flowing may be hydatiform mole.

4. That hydatiform mole may be present without obvious signs of pregnancy.

5. That the proper treatment of the condition is dilatation of the uterus, removing the mass and packing the uterus, to be followed by ergot to keep the uterus contracted, all operations to be done aseptically, and with all means of controlling hæmorrhage at hand.

6. That after the uterus is emptied the danger is not over, as the villi, which are cystic, may have perforated the uterine wall, and subsequently may cause fatal bleeding into the peritonæum.

112 West 80th St., New York.

FIBROID TUMORS OF THE UTERUS.*

(a) *When is Operation Justifiable?* (b) *What Character of Operation is Preferable and When?*

By George Tucker Harrison, M.D., New York.

To a conscientious surgeon the decision of the question whether surgical intervention is indicated or not, in the case of a woman affected with uterine myoma is often difficult in the extreme. If he oc-

* Read as opening paper in General Discussion before the New York Obstetrical Society, December 14, 1897.

cupies the radical stand-point that every *myoma* being a *neoplasm* should be removed by operation as soon as recognized, of course there can be no hesitancy in regard to the indication. But few gynæcologists, however, are prepared to take this ground notwithstanding the great improvements made in the operative technique in recent years. It should not be left out of view that a myoma is a benign *neoplasm* which causes no *metastases*, and that rarely in consequence of the growth itself, but mainly by reason of its consequences and complications is the organism injuriously affected. How many women do we see that have carried myomata for years without inconvenience and with a happy ignorance of their possession? This is especially true of the negro race. In subserous myomata and other forms, in which the endometrium, ovaries and tubes are left in a healthy condition, pregnancy has been observed not infrequently. Many of these women have borne children at term. Nowhere more than in these cases is it of paramount importance to individualize. The question might be thus propounded in each individual case: Are the dangers and annoyances incident to the myoma of such a grave character as to outweigh the dangers arising from the operative intervention, in addition to the inconveniences that attach to the mutilation? To a certain degree the environment of the patient must enter as a factor into the decision of the question. In the case of a woman who has to earn her bread by daily toil, and is unable to work except fitfully, in consequence of the symptoms evoked by the myoma, a radical operation might be imperatively demanded, while in the case of a woman similarly affected, whose circumstances were easy, there would be no occasion to subject her to an operation involving more or less danger to life. The fact that *sarcoma* is found at times associated with myoma is too rarely observed to found upon it an indication. A number of cases in the recent literature have been reported of the concurrence of myoma and carcinoma of the uterus and especially of the body. A causal connection is hardly to be denied, but notwithstanding the possibility of such a combination, this should not give an indication for myomotomy, provided the carcinoma were not demonstrated in the individual case.

Persistent and rapid growth of the tumor is generally cited as an indication for a radical operation. Even here it is necessary to individualize. In the case of a young woman in whom the tumor is growing slowly but continuously, we may attain to the conviction that it is too long to wait for the retrogressive metamorphosis of the menopause, and that it is wise to operate before the size of the tumor shall

have considerably increased the dangers incident to the operation. When a woman, however, consults us who is near her fiftieth year of age, the size of the tumor does not necessarily give an indication for radical measures.

In the case of subperitonæal myomata, it will be noted that they grow now and then when the patient has already attained to her climacteric age; nay, that the tumors only begin to grow quickly at this period of life. In such circumstances it may be assumed that they are nourished by their adhesions, and hence a radical surgical procedure is indicated. It is such cases as these, doubtless, that have led certain gynæcologists to maintain that persistent growth after the menopause is an occurrence by no means rare. This, however, is a mistake. The law is that retrogressive changes occur at the time of the climacteric, and are confidently to be expected. An exception to the rule occurs also in cystic degeneration of the myoma, which is apt to be found at the time of the menopause and grows rapidly. Radical surgical measures are here indicated. If the myoma occupies the pelvis, producing pressure symptoms, and especially if it interferes with the functions of the bladder, causing, as is not infrequent, dysuria and ischuria, its removal is indicated, if it cannot be replaced.

2. Profuse hæmorrhages, which have caused anæmia and perceptibly exhausted the patient, undoubtedly indicate a radical operation at times. As a rule, I do not believe that hæmorrhage in itself constitutes an indication for a radical operation until palliative measures have been adopted and failed. In years gone by I have repeatedly relieved this symptom by dilatation of the uterine cavity followed by injections of Churchill's tincture of iodine and thus superseded the necessity of a resource to myomotomy. More recently, as so many other gynæcologists, I have found curettage, followed by packing with iodoform gauze exceedingly effective. This procedure is entirely rational, as the bleeding is essentially caused by the endometritis so frequently associated with myomata. Another condition favoring hæmorrhage is the existence of mucous polypi occasionally found by predilection in angles of the uterine cavity corresponding to the opening of the tubes. It may be remarked here that the intensity of the bleeding is, according to Semb, rather proportional to the hypertrophy of the uterine wall and the hyperplasia of the blood vessels accompanying it. It is not intended by anything heretofore said to deny the well-attested fact that subjects of myomata who have lost much blood and are in a state of chronic hydræmia are liable to have that condition of the heart called brown atrophy. An oper-

ation performed on such a patient is likely to be attended with fatal results, as I have learned to my cost. Therefore in rather young women, with copious bleedings and tumors extending to the umbilicus or beyond, it is better to have recourse to a timely operation rather than to waste time with palliative measures and then at last operate upon a patient whose heart is too weak to allow recovery.

3. A radical operation is indicated when the pains and annoyances that accompany the growing tumor destroy all pleasure in existence and render the patient incapable of doing any work.

4. In a certain class of cases, in consequence of the myoma, ascites is evoked, which can only be relieved by an extirpation of the growth. In these circumstances myomotomy or total extirpation of the uterus is unconditionally indicated. Besides cystic and sarcomatous degeneration to which reference has been already made there are other anatomical changes which always imperil life and imperatively demand a radical operation, as sloughing, suppuration and telangiectasic degeneration. These, however, are rare events. One indication is mentioned by Ohlshausen which is ignored by gynæcological writers in general, and that is *profuse leucorrhœa.* And yet this symptom is the one that gives the greatest annoyance in some patients to the extent that it robs life of all its charm. Lastly when pregnancy takes place in a uterus the seat of large myoma the indication for operative intervention may be imperative; but this is a theme in itself. In reference to the character of the operation in the particular case the subject is so vast a one that I can only touch upon a few points and in general terms. For the method of vaginal total extirpation, cases of subserous and *interstitial myomata,* not exceeding the size of a child's head, should be reserved especially when there are a number of them. Phenomena of incarceration in the pelvis indicate enucleation of the tumor, and only rarely the total extirpation of the uterus. When submucous myomata have passed through the cervix and attained the vagina, the removal by scissors, using Emmet's method of traction, is usually not difficult, as the tumor is already more or less pedunculated. The same thing happens when the myoma is still in the cervix. When the tumor is quite large, with a more or less broad base, if seated near the surface it may be necessary to employ *enucleation, morcellement* and traction, according to the method of Dr. Emmet. And here it may be remarked that many a uterus might have been spared of late years if this method of traction had been better known and practiced. Truly remarks F. W. N. Haultain, "He (Dr. Emmett) has by this method of traction se-

cured results which at once elevate the operation to a position worthy of adoption." For larger myomata the supra-vaginal amputation of the uterus or the abdominal total extirpation are indicated. The fact that the after-treatment is so much more simple, after total extirpation than after supra-vaginal amputation, and the patient's condition appears so much better, and further that the healing process proceeds as a rule more smoothly and with so few complications, makes this method a captivating one to many operators. It is not to be denied, however, that it presents greater technical difficulties and demands a greater expenditure of time. When the portio and cervix are small, and it is important to save time, the supra-vaginal amputation is the preferable method of operation.

FIBROID TUMORS OF THE UTERUS.*

By Horace Tracy Hanks, M.D., New York.

Fibroid and myomatous tumors of the uterus vary in size, density and location; and our method of treatment to-day must be governed by the knowledge we have obtained from a large number of cases.

There is no one invariable rule to follow in treating this class of tumors.

At the present time the pendulum has swung back to where it always ought to have stayed, viz., each case must be treated on its own merits. The character of the operation, when an operation is required, *must* depend upon the character of the attachments, the location, and the symptoms which it occasions.

A few years ago Apostoli's method by galvanism was most thoroughly tried by nearly all of us. Many a patient was markedly improved, a few were absolutely cured, but a far greater per cent. than the cures, were those who were permanently injured by the strong currents of electricity used. To-day, with the average gynæcologist, his method of treatment is adopted for only the small, interstitial and submucous fibroids. Even the firm adherents for the uses of electricity in *medicine* are quite chary in advising its use for large fibroids.

Fibroid tumors, attended by hæmorrhage and consequent exhaus-

* Read as part of General Discussion before the New York Obstetrical Society, December 14, 1897.

tion, certainly call for treatment, even though they are not large enough to be a source of annoyance from bulk.

The frequent attacks of vertigo, the profuse menorrhagia and metrorrhagia, the palpitation of the heart, the excessive pain, are symptoms which call for relief, and sooner or later the surgeon is consulted. If he is wise, he will learn the locality of the neoplasm, and the character of its attachments, the amount and kind of treatment she has already received, and he will govern his surgical treatment by the knowledge which he has of such diseases.

We all know that the profuse hæmorrhage must be checked. We all know that ergot, given wisely, *often* checks excessive hæmorrhage of interstitial and small submucous fibroids. We all know that when the patient has been placed in a proper position with proper conveniences, and a thorough curettement has been made, and this followed by an antiseptic and a stringent irrigation those symptoms abate. We all know that electricity from the small positive electrode in the uterine cavity, with a negative electrode on the abdominal wall above the tumor, checks the hæmorrhage, and often cures the endometritis which is present as a result of the tumor. Often the curettement or the positive electrode, as here mentioned, prevents a recurrence of the annoying, if not alarming symptoms.

The class of cases which justly call for surgical treatment are those which are rapidly growing, which have impinged upon important organs, and are obstructing proper circulation, defæcation and urination, and causing palpitation of the heart and vertigo, even though there are no menorrhagia or metrorrhagia. In other words, I do not advocate operating upon each fibroid simply because it is a tumor. Hundreds of women in this city to-day have tumors varying in size from a walnut to four inches in diameter, and are hardly conscious of their presence. But when present, with these symptoms and with a history of rapid growth, surgical interference is demanded.

When a myo-fibroma complicates pregnancy, the necessity of an early operation depends upon its locality. For when above the middle zone of the uterus, although it may be a source of annoyance and distress to the patient, the child can be delivered alive, and the time for the removal of the tumor may be at the convenience of the surgeon *after* delivery of child. With our present methods of caring for our obstetric cases, we can prevent any undue hæmorrhage. When the tumor is in the body of the *cervix* it may be necessary to remove it at once, if it occupies more than one-half the cervical body.

The character of the operation depends upon the skill of the sur-

geon, the locality of the tumor, and its size. If the uterus and tumor is not more than three inches in its antero-posterior diameter, in a woman with a full-sized pelvis, and the cervix is not involved and can be easily drawn down near to the ostium vaginæ and the patient has borne children, I always operate through the vagina, after the method which I have described before, which is identical with Segond's method. I always make my incision in the vagina around the cervix, with a scalpel or scissors, with these simple fibroid cases. But I always use a thermo-cautery, or the galvano-cautery, wire in doing this part of the operation where there is a cancerous tumor involving either lip of the cervix.

I clamp the uterine and ovarian arteries. I have removed in the last six months in my service in the Woman's Hospital eight in this manner. All have recovered. But where, however, the tumors cannot easily be drawn down below the brim of the pelvis, although the skilled surgeon can remove them per vagina with a great degree of safety, I never advise young surgeons to attempt it.

They can be removed, as we all know, by the method of morcellement. Still the operation is so tedious to both surgeon and patient I never advocate operating in this manner for these larger tumors.

For tumors above four inches in size I always operate from above, tying off the ovarian arteries in the usual manner, dissecting off the peritonæum posteriorly and anteriorly to the cervix, and tying the uterine arteries in the usual method with catgut, and removing the lower cervix in most cases, often, however, leaving the bare shaving of the anterior and posterior lips, thus not injuring the vault of the vagina.

I always cover every stump, which would otherwise be left open in the abdominal cavity, with the peritonæum. The various methods advocated of treating the stump, make no difference to a good surgeon. He will pursue the best plan for the case before him. In uncomplicated cases the operation can be done quickly (I have done it in twelve minutes), and there should be almost no deaths. In the Woman's Hospital for the last three years I have used no ligature material in the abdominal cavity but catgut, and I have no desire to change my material.

It is quite unnecessary to expect to do all operations quickly. I have at the present time a specimen here which I wish to show you, where I was obliged to work for a full hour and a quarter.

This specimen is from a woman, thirty-five years of age, a Mrs. F., on whom I operated on December 1 in the Woman's Hospital. It is

a unique specimen, as you will see, and it teaches a lesson to be remembered. It is a multilocular fibroid of the uterus. She had been suffering with dull pain in pelvis and from slight febrile disturbance for several weeks before she entered the hospital, the temperature never rising above 101°, she informed me. On examination per vagina, I was morally sure I felt a fibroid uterus, which was so fixed by adhesions I could not draw it down into the vagina. On consultation, I decided to open from above. On making the usual incision and exploring the cavity, I found evidence of pus in the upper lobule, which you see. I believed I had made a mistake in my diagnosis and that it was an ovarian abscess. I at once placed the patient in the lithotomy position, made the usual post-cervical incision and passed my finger into the incision, but I could not push it through to the abscess. I knew then that there was a fibroid tumor plus the pus sac which I had seen from the upper incision.

I placed the patient in the Trendelenburg posture again, emptied the pus sac through a trochar, and, after properly protecting the intestines with gauze, I evacuated fully two and one-half ounces of pus. I then enucleated this tumor which you see, weighing probably three pounds, with three distinct nodules, one of which is the pus sac. No pedicle was found, and no arteries were tied. One could not work quickly with such a case.

I will not try to positively explain the manner of its growth, but I suspect it was a pedunculated, multilocular fibroid, thrown off from the uterus. The tumor had rotated on itself, the pedicle had become twisted, and the plastic exudate was thrown out, and the vessels of circulation had been formed in this exudate and the tumor had thus been nourished by the adhesive inflammation which had surrounded the growth. The uterus was not removed. The patient has made a most satisfactory recovery. This teaches us that tumors may be thrown off from the uterus, and recoveries occur. Pus may form, and later death may be expected. The operation must be done well, with no carelessness from ignorance or haste. If the patient is anæmic, or if we fear she will suffer from shock or exhaustion, transfuse from sixteen to thirty-two ounces of the normal saline solution during the operation, by passing the fluid into the pelvic or cephalic veins. I have done it often, and I am sure it has been exceedingly serviceable to me.

Retroperitonæal tumors, starting from the body of the cervix, pushing up Douglas's pouch, or the bladder, are very difficult to manage unless one can discover their origin. Careful inspection before operation and during operation, however, will reveal the nature, loca-

tion and attachments, and the method of operating becomes at once quite plain.

Every woman who is to submit to supra-pubic hysterectomy should be systematically stimulated with a dessertspoonful of whisky every hour for six hours before operation, and two hours before operation full one and one-half ounces of whisky and four ounces of normal saline solution should be injected into the rectum, above the brim of the pelvis well into the sigmoid flexure.

Bad results follow supra-pubic hysterectomy from various causes.

1. Neglect of proper preparation, as indicated above.

2. The frequent loss of blood during operation, which, with a good operator, never should occur.

3. Slow operation when it should be quick.

4. Sepsis from the cervical canal which has not been sterilized and packed with gauze.

5. Carelessness in tying the uterine arteries, resulting in post-operative hæmorrhage.

6. Injury to ureters or rectum.

The method of treating the stump must vary with different cases with every good operator. I always insert iodoform or nosophen gauze around the severed tissues near where the os internum would have been. I cover this gauze above with the perinæum from the anterior and posterior portions of cervix. My house surgeon is directed to draw this gauze down one to two inches every time he visits his patient. If the temperature rises above 101°, gentle but copious vaginal antiseptic douches are used. No after-treatment seems necessary, except the removal of the gauze, the last portion, coming away about the seventh day, or not until after a firm exudate has been deposited above the gauze in Douglas's pouch.

VAGINAL VERSUS ABDOMINAL OPERATIONS, PRINCIPALLY FOR PUS IN THE PELVIS.*

By Joseph Taber Johnson, Washington, D. C.

In bringing to Philadelphia a bundle of old straw, in the shape of a paper upon pus in the pelvis, and threshing it over again in your So-

*Read by invitation before the Philadelphia Obstetrical Society, Dcembeer 2, 1897.

ciety, where this subject has been so frequently and so ably discussed, it has been suggested by a kind friend that I am placing my head in the lion's mouth, and that it is quite liable to be bitten completely off.

Should any sound grains of wheat be evolved from the threshing of the essay or the essayist in the discussion which may follow, the hope is expressed that the seed may not fall entirely upon stony ground, but that it may bring forth a little fruit for the benefit of the cause for which we are all honestly and faithfully laboring. In the memorable discussion of vaginal versus abdominal operations which occurred in the American Gynæcological Society at its last meeting in Baltimore in 1895 the subject was introduced by the reading of three papers, the first by Jacobs, of Brussels, the second by Wathen, of Louisville, and the third by Henrotin, of Chicago.

The first two papers advocated vaginal hysterectomy, largely on account of pus, while the third advised a variety of operations through the vagina for a variety of purposes, not the least important of which was that for exploration and the prevention of abscess by breaking up lymph exudates early and establishing free drainage. An important debate was elicited which was opened by your distinguished President upon one side, and by a no less distinguished member of your society upon the other. Drs. Lusk, Polk, and others, pronounced the discussion one of the most important which had ever occurred in the society. It was generally believed, however, that the question was by no means settled, and that further time and experience, only, could determine the relative value of the two methods: whether the one should be practiced to the exclusion of the other, or whether a wise and true conservatism dictated that the general condition of the patient, as well as the situation of the local lesion, should decide the operator in each individual case which method to adopt for the best good of the innocent and trusting sufferer. Lusk especially congratulated the Society that we now had two routes through which we could reach these pus collections. Many statistics, with which you are all familiar, were quoted on both sides, and some of those who had operated very little, or not at all, through the vagina, promised to try that method in cases thought to be suitable, and to be governed by their own, and the results of others in the future. It is with the hope of still further elucidating this interesting and important subject that my paper has been written, and also for the purpose of gathering from the discussion which may follow, what views are now entertained in this great center of medical education in regard to vaginal methods of operating principally for the relief of patients suffer-

ing with pus in the pelvis. There seems to be little if any division in the profession as to the advisability of performing hysterectomy through the vagina when indicated for malignant diseases. The present discussion then is centered chiefly upon operations for pus and old blood collections in the pelvis, situated, for the most part, low down, behind the uterus, and particularly in women who wish to have children. In the evolution of the vaginal operation, it has gradually developed from a simple tapping with an ordinary trocar, through various stages, until now the posterior cul-de-sac is widely opened, the bottom of the pus sacs are torn out as completely as possible with the fingers, free irrigation is practiced, and gauze packing is lightly introduced, thus keeping open the best avenue of drainage. It is quite possible that some of the present criticisms of this modern vaginal operation are aimed at the old and incomplete, but now fortunately obsolete methods which have been practiced, in some form, from time immemorial. Certainly the present results obtained in bad pus cases are far more gratifying in their lessened mortality and post-operative sequelæ than when these cases were all operated on through the abdomen. In a paper read before the Southern Surgical and Gynæcological Society in November, 1896, at its Nashville meeting, Dr. Haggard, who had been an interne in the Women's Hospital in New York, stated that he had recently collected the mortality statistics of abdominal operations for pelvic pus, in five metropolitan and Baltimore hospitals for the preceding year, and that the death rate had been found to be 18 per cent. Dr. Hanks, of New York, in a recent paper on this subject, in recounting his conversion to the ranks of the vaginal operators, says the mortality of abdominal operations in badly adherent pus cases lies between 25 per cent. and 30 per cent. Dr. Noble, of this Society, in a paper read at the Atlanta meeting of the American Medical Association in August, 1896, placed the death rate in the same class of cases at about 25 per cent. Several other recent papers on pus in the pelvis make practically the same statement. One paper by an abdominal surgeon of my own city "on 66 laparatomies for pus" states his mortality at 16 per cent., several of his fatal cases dying of shock within a few hours of the operation. Another sends a reprint, within a month, of 150 laparotomies for pus with a 25-per-cent. mortality in his first series of cases, which included a number of large pelvic abscesses in feeble patients. Now, Mr. President, I feel authorized, from my own experience, within the past three years, and from the experience of quite a number of excellent gynæcological surgeons, with whom I am well acquainted, to express the belief that if these fatal abdominal

cases had been operated on through the vagina there would have been very little mortality to record or none at all. I recently reported a series of cases with considerable detail to our obstetrical and gynæcological society in Washington in which there were some cases as bad as they could be and still be alive, who were operated on by vaginal incision, irrigation and gauze drainage and they all got well, without an exception, and what is hardly less important they are permanently cured, with none of the drawbacks so frequently and dismally portrayed as likely to occur. The vaginal operation is performed much more quickly than the abdominal, and is therefore of greater advantage to exhausted patients. It is incomparably safer, as many operators report that it has hardly any death rate at all.

Why not adopt it then in a greater proportion of cases? The vaginal operation referred to in this paper, and practiced by the writer, and by those surgeons to whom he has referred, consists simply in the incision of the vaginal fornix immediately behind the cervix, the opening of the pus or blood sacs with the pointed curved scissors or the exploring finger, dilating as widely as possible these openings, the use of free irrigation and gauze drainage. Comparatively little preparation is required of feeble patients, exhausted by the pain, fever, sweats and nausea of a long or acute illness, and the operation is followed by little if any shock or elevation of temperature. The only instruments required are a Sims speculum, curved pointed scissors, a pair of dressing forceps and a tenaculum. This method has been practiced, and lives saved in some of the worst cases, without even the use of ether. In two of my cases we feared the anæsthetic more than we did the operation. It has been claimed by the opponents of the vaginal incision that it is unsurgical, incomplete and scarcely worthy of the name of surgical operation, and is likely to require the opening of the abdomen later on to correct the errors, and finish the work left undone by the vaginal operator. That these criticisms are unwise, unjust and incorrect, the numerous permanent cures resulting from the sub-pubic operation clearly and abundantly demonstrate. It might be useful to place the two operations and their results in direct contrast in a few brief propositions, as follows: The modern vaginal operation is quick, easy and safe for any surgeon. The abdominal operation is long and difficult, when many adhesions exist, and has a 15 per cent. to 25 per cent. mortality in the hands of all but the great experts, and their mortality must always be large in the bad cases. The vaginal operation permanently cures the patient in a much larger proportion of cases than was formerly supposed. The abdominal operation fails to per-

manently cure the patient in a much larger proportion of cases than was formerly supposed or leaves some of them in a condition nearly as bad as before the operation. It is very rare for the vaginal operation to be followed by any of the post-operative sequelæ. It is very common for the abdominal operation to be followed by many of the post-operative sequelæ. When the vaginal incision fails to cure and painful adhesions and troublesome pus sacs have to be subsequently broken up and removed through the abdomen the operation is robbed of many of its dangers, on account of the freedom from pus and the greatly improved condition of the patient. It is the universal testimony of too many good men to be doubted that the vaginal operation is scarcely ever followed by any shock or increased temperature; while the shock of the complete enucleation of old pus tubes from a dense mass of adhesions to the omentum, bowels, folds of the broad ligament, uterus, and, indeed, everything they touch, including the vermiform appendix, is often very great, and not unfrequently fatal within a few hours. Goelet says the patient will more readily consent to a vaginal section, hence hopelessly diseased organs may be removed earlier, and the mortality is thereby lessened and her sufferings relieved earlier.

Physicians will advise vaginal section in conditions which do not seem to present sufficient gravity to warrant the risk of abdominal section more frequently when they realize the simplicity and safety of the operation. It is doubtful if any one will deny that drainage of infectious pus or any other fluid is more thorough, safe and in accordance with the laws of gravity when down hill through the vagina than up hill through the abdomen. Then again, Coe, Hanks and others have recently drawn attention to the fact that women are becoming more intelligent upon these subjects and are themselves demanding to know of their surgeons if some of these operations which have formerly been performed through the abdomen cannot be just as safely done through the vagina. They have become acquainted with the troubles which too often follow in the wake of laparotomies from the sufferings and annoyances of their friends and acquaintances. They dread the longer convalescence, the stitches, the plasters, the possible mural abscesses, the frequently unsightly scar, the abdominal supporter for six or twelve months and the possible ventral hernia from which the sufferings are scarcely less than from the disease for which the operation was originally performed. Those who vehemently oppose this operation declare that the opening and draining of these pus collections through the vagina will not effect a permanent cure. It is suggested that this declaration is based on the opinion long held in regard to the inefficient and

often dangerous method of tapping these absecsses with a common trocar or aspirator. By this method it is quite possible that blood vessels were punctured, the bladder, uterus and intestines injured, the pus not wholly evacuated and fresh infection produced by infiltrating pus, causing in some cases death and in others laying the foundation for a difficult and dangerous cœliotomy in the future. Attention is drawn to the fact, however, that the technique of the vaginal operation has greatly improved, and, as previously mentioned, a wide opening is now made, the parts fully explored with the finger, clots and masses turned out, the widely-opened pus cavity thoroughly irrigated with a hot normal salt or antiseptic solution and the parts loosely packed with yards of gauze, if necessary. In cases appearing to demand it, pus tubes, tubo-ovarian abscesses and the uterus itself are often completely removed, as you all know, through the vagina, leaving wide open the largest and best possible avenue for drainage. It is expressly desired, however, to emphasize the statement that these more radical steps are frequently unnecessary to a symptomatic, and in many more cases than one with an abdominal training would think possible, to a perfect and permanent cure. When I first began to operate for pus through the vagina, I told the families, and sometimes the patient, that the present operation was simply tentative and that later on, when she was stronger, the more complete surgical procedure could be done from above, thus producing a final and permanent cure. I now remember only one instance where, among my own cases, a secondary abdominal operation has been necessary. To my great surprise, after thorough drainage, the pus sacs were found to contract down, what was left to granulate up, and finally, as the general health was restored they must have been absorbed, as the uterus was left so free and healthy that normal periods have occurred and childbirth has not infrequently been reported. So I have come to believe that many of these cases which we formerly subjected to laparotomy, with all that that implies, may now be completely, safely and quickly cured by removing absolutely nothing but the offending pus. On the other hand, I have quite a number of times been compelled to remove the uterus from below, and thus secure good drainage, when a previous abdominal operator had left the pelvis full of adhesions, infected ligatures, sinuses or fistulæ. I doubt if there are as many supra-pubic operations required to correct the errors or supply the deficiencies of infra-pubic work as there are vaginal hysterectomies done to relieve the post-operative sequelæ of abdominal operations for pelvic pus. Lest it should be thought by some that the effects of abdominal operations for adherent, low-down

pus tubes have been too greatly emphasized or exaggerated, I beg to refer members to a paper by Dr. A. Palmer Dudley on some of the injuries following laparotomy, in which he dilates especially upon seventy-eight cases of fecal fistulæ, collected by him, and the horrible condition in which these patients were placed by the constant foul odors and fecal discharges from which they suffered, caused by this too frequent accident. Also to two papers, read at the Hot Springs meeting of the Virginia Medical Society, last September, upon post-operative intestinal obstruction and post-operative intestinal paresis, by Drs. Taylor and McGuire, of Richmond; also to a paper in the October number of the *American Journal of Obstetrics*, written by one of the most skillful abdominal surgeons in America, whose experience outnumbers mine four to one, in which he portrays and denounces the frequency and extent of the post-operative sequelæ in language so vigorous and emphatic that the statements in this paper are exceedingly mild in comparison. Though intended for another purpose, the hope is expressed that he will pardon your essayist for introducing his evidence as favorable to the side of the question under discussion. If many of these accidents and drawbacks, as they are called, can be avoided by doing some of these operations, where the casus belli is favorably situated, through the vagina, I hold that it is our conscientious duty to practice modern vaginal surgery in the future more than we have done in the past. The evil prognostications of infection of the peritonæum from the vagina do not seem to be realized by those who are doing this work. If they occur, they must go to other surgeons and thus escape the observation of the original operators. Recent bacteriological investigations have proved that infection from the vagina need not be feared as much as was formerly supposed. Indeed, the vaginal operation for pus rarely ever opens the peritonæal cavity. The abdominal contents are so walled off by adhesions that they are neither touched or soiled, and while this very fact makes the vaginal operation safe and easy, it is exactly this fact which makes the abdominal operation difficult and dangerous.

To state it in another way, one operation is rendered safe and easy very much in proportion as the other is difficult and dangerous. The statistics of foreign and American operations have not been quoted, and the extent of their work in hysterectomy and other vaginal operations enlarged upon for the same reason that it is unnecessary to carry coals to New Castle. The audience is just as familiar with all these facts and figures as the essayist, and the subject is only mentioned to indicate that it has not been overlooked. It would be interesting to

dwell upon the other operations through the vagina which are now being frequently done with great benefit and with few drawbacks, which have been formerly done through the abdomen, but the twenty minutes which your President wrote me would be allowed to this paper must be nearly if not quite exhausted; I will therefore be compelled to simply enumerate them, leaving out the comments which their importance, in this connection, deserves. This enumeration is made from reports of cases, reprints of papers, and private letters from men whose names are familiar to us all and with many of whom we have all been long and familiarly acquainted, which places their authority beyond question. They are such men as Henrotin and Watkins, of Chicago; Mundé, Cleveland; Polk, Lusk, Hanks, Boldt, and Vineberg, of New York; Sutton, of Pittsburg; Montgomery and Noble, of your own city; Kelly, of Baltimore; Haggard, of Nashville; Fry and myself, of Washington, and many others, as the saying goes, too numerous to mention.

In addition to vaginal hysterectomy, incision and drainage of pus collections, Kelly has recently reported thirteen successful vaginal operations for extra-uterine pregnancy. Hanks also recommends it after favorable experience. Members are all familiar with the work done by Durhssen, Mackenrodt and Martin of Berlin and others through an anterior colpotomy in the removal of small uterine, tubal and ovarian growths. Sutton is enthusiastic upon this method of operating, and thinks anterior colpotomy has a great future. Vaginal fixation in women unlikely to have more children, and shortening of the round ligaments through the vaginal incision, for the cure of the retro-displaced uterus has been highly extolled by Vineberg and Goffe, of New York. Old infected hæmatoceles and even freshly-formed hæmatoma are operated on through the vagina with the same ease and safety as large adherent pus collections, and in very much the same manner. A number of these cases were reported by Montgomery in a paper read to the American Gynæcological Society at its last meeting in Washington. When the diagnosis is in grave doubt, Henrotin, of Chicago, recommends pelvic exploration with the aseptic finger through the vaginal incision as a much more safe procedure than through the abdomen. If further operating be found necessary we may determine whether, in view of the recent developments referred to in this paper, the best good of each individual patient will be promoted by a vaginal or an abdominal operation.

926 Farragut Square, Washington, D. C., December 2, 1897.

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EDITORIAL.

THE ANNUAL MEETING OF THE STATE MEDICAL SOCIETY.

Between the time of this writing and of our going to press the Medical Society of the State of New York will have met and have finished its deliberations. As this Society is composed of delegates from the county Societies all over the State, as it is the oldest and most powerful, it will be representative, truly and in every sense, of the sentiment, aspirations, wishes and determination of the great majority of the medical profession in this State. Being so composed and thus representative, it is the mouth-piece of the profession and possesses the power, dignity and influence both with the Legislature and with the community at large of that great body which it represents. As it deliberates, as it acts, so will the medical profession in this State be judged. If its members are united, dignified and broad-minded in their views and interpretation of the honor and rights of the profession, insistent and unanimous upon the legislative redress of abuses, menacingly decisive in their condemnation and reprobation of those individuals who are ready to sell their brethren for private gain and personal advancement; if, in a word, these accredited delegates are fearless and honorable men, faithful to their trust and united in action, we may again

rehabilitate ourselves in public esteem and a new era of unity, honor, prosperity and usefulness will dawn for medical men in this State. If, on the other hand, selfish, cowardly personal or factional interests, vacillating action or vulgar political intrigue dominate these deliberations, we will continue rapidly to decline in public esteem and soon find our level, both socially and in the body politic, among butchers, grocers, caterers and other retail tradespeople, who are useful and necessary but neither a pretentious nor very elevated class in the community.

We are not croaking, for never has the profession been in such dire straits from disunion and internal dissension, from lack of profitable work and from its low place in public esteem. Even the very poor—at once our natural heritage, our talisman and our badge of honor—have deserted us, for our selfishness and rapacity have driven them from our public hospitals and clinics and have filled their places with disreputable well-to-do beggars. One thing is undeniable: However low we may fall, however great our material needs may be, however much our enemies may limit and diminish our opportunities for livelihood, however small and pitiful our influence, both socially and politically, may become, we have but received our deserts and have but ourselves to blame.

The profession has the power if it have the will, the capacity if it have the courage, to compel union and coöperation in its ranks. If the well-intentioned and the far-seeing do not demand that the selfish and the purblind others shall subordinate their petty personal interests and work in union and coöperation for the general good, are they not also equally selfish and time-serving?

We assume that the majority of the profession are still intelligent and honorable men, appreciative of the dignity of membership in a scientific body, proud of its traditions, jealous of its honor and anxious to contribute in all things to its collective advancement; if this be not so, if there be no longer a force in our midst strong enough to hold down the instincts of the human animal among us, then it is time for all self-respecting men to leave the ranks of professional cant and pretension and seek the more congenial field of honest trade.

The weakling and the thoughtless have brought up again the *shiballeth* Over-Competition, as a sufficient explanation of the prevailing material distress in medical ranks. What do they mean? Is it competition in individual efforts for the honor and betterment of the profession at large, a competition in mutual fair play, of generosity to others and justice to one's self, competition in healthy ambition to obtain renown and the

gratitude of humanity by adding to the common store of truly scientific knowledge; or is it competition in avoiding cheap notoriety and self-advertisement by the over-scribbling of other men's thoughts with original distortions of these, in hesitancy to rush into print with half-baked scientific theories to catch a little while the consultation-dollars of the impressionable and inexperienced practitioner? But these have always been the expressed principles of the medical profession, and all that it is and all that it has gained belong thereto. So it cannot be this sort of competition which is meant as disastrous to us in New York. No, the competition which is steadily ruining us is one more akin to that of the Stock Exchange and the Commercial Trust.

The meeting of the State Society this year is fraught with more momentous issues than probably any meeting which has ever been held. The subjects especially advertised for discussion and proposed legal redress are the iniquitous Hospital and Dispensary Abuse and the scandalous one of Medical "Expert" Testimony in Law Courts. These should be the first, because they are the most pressing in importance, but many others need equally the axe and plough and all who oppose the remedy of these abuses, on whatever specious plea, merit the contempt and ostracism of every honest medical man.

APPENDICITIS.

This disease, though not peculiarly gynæcological, is so often brought for treatment to the specialist, has so often lent its name to conditions purely gynæcological and has usurped to so large a degree that paramount interest and importance in feminine thought and gossip formerly held by diseases of the uterine appendages, that we need offer no further apolgy for introducing it into editorial discussion in this JOURNAL.

From many signs and portents, we believe that it is rapidly losing *vogue*, that appendiotomy is about to lose its place, in popular estimation, as the acme of surgical progress and skill. When it has lost its power to conjure dollars for operators, it will be performed less frequently and will soon be relegated as has Tait's operation upon the tubes to its proper place as a valuable and, when indicated, necessary operation. But when that time arrives we believe that surgeons will agree that the indications are not so common nor so frequently met

with as is now contended. It has been a little wearisome for the past five or six years to be regaled by the laity, in and out of season, with scientific details of the marvelous operations performed upon themselves—details furnishel in all their delightful grewsomeness by their respective operators, greatly to the enhancement of the latters' reputations and to the popularization of the operation among future possible patients. It has also been rather disgusting when such details, inspired from the same source even to the size and appearance of the preserved specimens, have come glibly from the mouths of women and young girls. But let that pass. It is a sign of the times.

When appendicitis and appendiotomy have ceased to be a matter of popular congratulation and almost social distinction to those who have had their appendices removed we will, most of us, settle down with a sigh of relief and begin to add up and subtract the balance sheet of this disease and its surgical treatment. Then and not before will the profession be the richer, by an unprejudiced apprehension of the scientific status of this disease and its therapeutics, and patients relieved from an experimentation of very mixed results.

How far the theory and practice of surgery, in spite of its many brilliant achievements, still is from a truly scientific status and to how slight an extent surgeons possess the scientific or logical habit of thought is clearly evidenced by the universal tendency to rush to extremes, to advocate strenuously and to adopt recklessly new theories and methods of treatment upon slight and inadequate data, the spirit of intolerance exhibited against those who will not mount the hobby-horse fad of the hour and, finally, by the general proneness to insist that the lines of treatment shall be in all cases, as it were, rectilinear.

If our knowledge of pathology has taught us anything, we know that the conditions of the same disease, and its extent, differ almost as much as the leaves on trees. We know, also, that the diagnostic accuracy, even of the best of us, is very far from perfect. How unscientific it is, therefore, to insist that the same method of therapeusis shall be applied to every case of disease having the same general symptoms, as though medicine were a cooking-school and we were practicing by recipes!

All we have said applies with peculiar force to the treatment of appendicitis, because on no subject has more intolerance been exhibited, more nonsense been written and more illogical reasoning in generalties been expended. In the history of no fad—even when the rage for Tait's operation, twelve or fifteen years ago, galloped over us like the Angel of Death—has more confusion existed in the surgical mind as to the

practical definition of terms, as to differential diagnosis before operation nor a more blind insistence upon one method of treatment being always pursued in all cases.

No one but a fool would deny that the surgical treatment of this disease is just, logical and an immense boon to humanity. So is amputation of the limbs; but does this imply that every compound-fractured limb must be amputated, because gangrene or necrosis may occur at the site of injury? Does the undeniable life-saving results in many cases of appendiotomy excuse the absurdity of the dictum that in all cases of sudden pain in the right inguinal region, temperature and tenderness at "McBurney's spot," the patient must be subjected to the serious danger of laparotomy without an hour's unnecessary delay? In what do these symptoms differ from simple colic at the head of the colon, from fæcal obstruction in the same region, from gaseous distention of the bowels from a functional cause or from simple perityphlitis? And what becomes of "McBurney's spot" when a previous perityphlitis has existed with the appendix lying, perhaps, behind the head of the colon, a not infrequent pathological result of a previous localized peritonitis in this region? The above "hurry-call" dictum has been greatly modified in practice in the last few years but this is only further evidence of how much modification must occur in the surgical theory of appendicitis before we reach a basis for scientific treatment.

A recent controversy has taken place, in the columns of one of our contemporaries, upon the relative merits of the surgical and medical treatment of appendicitis, between Dr. Robert Morris of New York and the Surgeon General of this State; nor was this dispute confined to the medical press but an account of it was given, a few days ago, to the public through the daily newspapers. The points in the dispute were these: Dr. Morris takes General Terry to task because the latter publishes a very high percentage of cures in appendicitis by a method of medical treatment which must meet the approval of all medical men, doubts his statistics and challenges him to give the name and history of each case in detail. This General Terry cannot do and states the cause. Thereupon Dr. Morris offers General Terry a wager that the latter cannot prove that none of his cures have not subsequently submitted to operation. This method of test General Terry very properly, in our opinion, refuses.

Apart from the personality as individuals of either of these disputants or of their reliability as witnesses on their respective sides of the question, the subject of this controversy, its merits, its contentions and its method of conduct furnishes us several valuable object lessons.

General Terry's contention that many cases of appendicitis or so-called appendicitis, *i. e.*, cases presenting all the symptoms, barring the suspicion of pus, for which most surgeons now insist upon the radical operation, may and do get well by medication only is one in which we heartily agree and one to which we believe the whole profession will subscribe, as we have already said, when appendicitis as a fad has run its course. As to the accuracy of General Terry's percentage we do not know nor do we care. It is quite as much within the range of probability that the particular cases which furnish his statistics may have been cured by expectant medication as that many of Dr. Morris' cases would have fared equally well if he had applied the same method before resorting to the knife. No man can lay down iron-bound rules for the treatment of another man's cases and this means, when applied here, that the medical expectant method stands on an equally scientific basis as does the surgical, in the treatment of appendicitis, while both become absolutely irrational if either be applied to every case. The frequent impossibility of a previous differential diagnosis, the many mistakes in prognosis to which living and healthy witnesses who refused the chances of the knife testify to-day, on the one hand, and the many deaths owing to undue persistence in expectant treatment, on the other, should teach us to avoid either extreme and to preserve an even mind and judgment.

A NEW CONTEMPORARY.

The *Philadelphia Medical Journal*, a weekly periodical devoted to General Medicine and Surgery, will have seen the first month of its existence when these congratulatory lines are published. Each issue has, if possible, been a distinct improvement on the preceding one and it would seem to have achieved success with its first effort. Certainly no medical journal ever saw the light under such auspicious circumstances. Well-endowed with capital, owned by a number of the best-known medical men in Philadelphia and edited by a physician well-equipped with general and special knowledge both in his profession and in medical journalism, it appears suddenly not upon the medical horizon but in our very midst full-grown and mature—without question the largest, cheapest, best edited, most popularly and conveniently arranged and the most comprehensive, both in matter and scope, of any weekly journal published on this continent.

Most auspicious too is the time of this Journal's birth, just when the profession is beginning to realize its long bondage to lay publishers and its complete dependence hitherto upon the good-will of these men for its mental pabulum and is awakening to the fact that it has for many long years been pouring its money into the pockets of those who cared nothing for its aims, its needs or its advancement but who merely exploited it as a commercial enterprise. If the money spent by physicians in the past twenty or thirty years on medical literature, which has enriched the leading lay publishing firms of medical works in this country, had been retained within professional influence and been expended in the interests of the profession, we would to-day have the greatest and most powerful medical press in the world and the profession would be a great, influential and united body of men, ably defending itself and capable of expressing its will and upholding its rights through the voice of that power which is greater than any other in this Commonwealth—"the Maker of public opinion."

It is unnecessary to tell those of our readers who have seen even one copy of *The Philadelphia Medical Journal* that it is owned and edited by medical men. It has neither the old familiar tone of the journalistic monopoly, now happily broken, which very plainly told medical readers: "Take it or leave it, for you can get nothing else," nor the later and more discreet because necessary manner of lay medical journals which, in fear of losing even one subscriber by frankly and honestly speaking the truth, is that of the typical tradesman—everything to all men and sincere to none.

This new Journal speaks in no such anxious voice; it meets the profession as man to men, as fellow practitioner to fellow-practitioners, as brother to brethren. It knows what the profession wants and it is supplying that need; it does not endeavor to bribe the profession to subscribe by offering unlimited credit, that its advertisers may be held, as lay publishers are now doing in regard to their medical journals. On the contrary, it tells medical men that it is their duty as well as their interest to support their own medical journalism and it demands payment in advance.

We have no doubt that this Journal will rise higher and higher upon its already successful pinions and we hope that it will soon attract to its list all subscribers to weekly journals which are not controlled and published by medical men.

Again we give it hearty welcome, for it is fighting with us the fight which we have fought almost alone for six hard, long, weary years, namely, to persuade the profession (alas! that it should need persua-

sion!) to support its own rather than outsiders, that medical men are more cognizant of its wants and are more capable of supplying them. And of this principle *The Philadelphia Medical Journal* is an embodiment and a brilliant exemplar.

CORRESPONDENCE.

HONOR TO WHOM HONOR IS DUE.

LONDON, December 23, 1897.

To the Editor of the American Gynæcological and Obstetrical Journal:

SIR: In your issue of December, 1897, Dr. Malcolm McLean describes a method of pelvimetry, which he says "cannot be equaled in accuracy by any mechanical device."

I agree with him in his estimate of the value of the method he describes and think that he deserves thanks for having called attention to it.

But may I point out that it was first fully and exactly described by Mr. Robert Wallace Johnson, in his "System of Midwifery," published in London in 1769; that I have quoted it from Mr. Johnson, and added illustrations of it, in my work on "Difficult Labor," published in 1894, and that I have there suggested that it should be called "*Johnson's Method*," in justice to its originator? I am, sir, faithfully yours,

G. G. HERMAN.

20 Harley Street, Cavendish Square, W.

REVIEWS.

The Peritonæum. By Byron Robinson, B. S., M. D., Chicago, Ill. C. V. Waite & Co., Chicago, Ill., Publishers.

The object of the volume before us is to present views, theoretical, practical and experimental on the structure and function and the histology and physiology of the peritonæum. The opinions presented are based upon knowledge gained through years of observation through the microscope and experimental research. Any work that aids in any way our efforts to combat the diseases of the peritonæum that destroy so many lives yearly should be warmly commended. This book contains much that is original, and the appended bibliography shows an exhaustive research into the literature of the subject. Among the many interesting facts, it is stated that "with free or non-ligated lymphatics salts become transported from the peritonæal cavity through the circulation into the bladder in seven minutes," and the author suggests that with the recognized rapidity of peritonæal absorption in extensive and dangerous hæmorrhage, peritonæal injection might save life. "In thirty minutes during life the peritonæal cavity will absorb as high as ten per cent. of the body weight. The rapid fluid absorption by the peritonæum teaches against irrigation in laparatomy, from the fact that the germs would become widely and rapidly distributed." To those accustomed to regard the omentum simply as a heat preserving and protective blanket to the intestines, the author's eulogy will be both instructive and interesting: "The omentum is the great protector against peritonæal infectious invasions. It builds barriers of exudates to check infection. It is like a man-of-war ready at a moment's notice to move to invaded ports. It circumscribes abscesses, it repairs visceral wounds and prevents adhesions of mobile viscera to the anterior abdominal wall. It is like a moving sentinel, whose beat is the whole peritonæal cavity. It is the surgeon's friend, covering up the evil his hands have wrought. It is a diagnostic aid directing the surgeon to the original seat of peritonæal diseases, where it first contracted adhesions. It closes intestinal wounds. The omentum is an area of peritonitis, not an area of infective absorption. It resists infectious invasions by typical peritonæal exudates and not by succumbing to absorbed sepsis. Comparative anatomy teaches us that the omen-

tum is not for the purpose of keeping the intestines warm. It is a storehouse for fat. It is a director of peritonæal fluids, a peritonæal drain." It is only by methods similar to those pursued by the author that we may hope to find a remedy for the diseases of the peritonæum and the good work that has been done by him in this direction should be appreciated by the profession.

The text is illustrated with many well-executed cuts.

X. Y. Z.

The Transactions of the Congress of American Physicians and Surgeons in 1897.

The volume containing the Transactions of the Congress of 1897 is a very creditable one.

The papers that interested us most were those upon "Acute General Peritonitis," by Dr. N. Senn and Dr. Robert Abbé, with the able discussion by Dr. McCosh and Dr. Fowler. The book is well gotten up, and reflects credit upon the secretary. H.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, December 14, 1897.

The *President*, W. GILL WYLIE, M.D., in the Chair.

An Old Operation for Complete Procidentia Uteri.

Dr. WILLIAM M. POLK: This is a patient upon whom I operated in February, 1892, for complete procidentia uteri. She is now forty-eight years of age, and, as you see, a very large, fat woman. At the time of the operation the upper two-thirds of the vagina were everted, and, together with the uterus, practically outside of the woman's body. The destruction of the perinæum was so complete that it was out of the question to endeavor to keep the uterus in position by any of the ordinary plastic operations, so I concluded to adopt a procedure which I had employed once before and which I subsequently reported to the American Gynæcological Society at its meeting in Philadelphia in 1893, in conjunction with a paper by Dr. Edebohls on this question of operation for procidentia. This procedure consisted in the removal of the uterus through an abdominal incision, the drawing up of the slack of the vagina, and the attachment of the latter to the anterior abdominal wall in such a manner that the vagina was entirely closed from above and covered with peritonæum, thus avoiding the danger of contamination of the pelvic cavity from below. I bring the case before you to-night in order that it may be seen what the condition is after the lapse of six years—whether the cure of the prolapse is as complete as might be expected if any other operation for this condition had been performed. A plastic operation upon the perinæum and narrowing of the vagina were performed secondarily to this operation. The patient was discharged at the end of two months, and since that time she has been performing her duties as a servant without any inconvenience, and she expresses herself as feeling perfectly well in every respect. The patient was as stout at the time of the operation as she is now, so the case is a severe test of the merits of the procedure, for these stout women are the most difficult cases to cure. I have not reported further upon this operation until now, because I thought it best to wait and see the ultimate result. I have done the other operations, such as

the ordinary plastic work upon the vagina and perinæum, in these cases, and have also made use of the operation of complete obliteration of the vagina by means of buried silver sutures, but in none have I had such a good result as has followed in this case. The procedure has been reported (*Am. Journal Obstet.*, April, 1896, page 481) before the Philadelphia Obstetrical Society, by Dr. Baldy, who was under the impression that it originated with himself at Philadelphia, and that this method was taken from his. Such, however, is not the case. (See *Am. Journal Obstet.*, June, 1892, pages 832-834; Transactions Am. Gyn. Society, Philadelphia, 1893; vol. XVIII., pages 311 and 320.) These operations are apt to slip one's memory, and it occurred to me that if this operation is worth anything, it would be well to bring up the matter as one of the results of the work of this Society.

Discussion.

The President appointed Drs. Cragin, Goffe and Broun to examine the patient and report on the condition.

Dr. E. B. Cragin: We have carefully examined the patient, who is a large, fleshy woman with a pendulous abdomen, one of the type in which a recurrence would be especially likely to occur. We find the perinæum in good condition; the vagina narrow and the fornix high. The woman is in a good condition in every way. The only thing which prevents the condition being perfect is the existence of a very small ventral hernia. She does not complain of this, however, and says she feels perfectly well.

I would like to ask Dr. Polk how, in his opinion, the results of this operation compare with those which follow ventral fixation? I have tried amputation of the cervix, repair of the perinæum and ventral fixation in such cases, and have been much pleased with the result.

Dr. Polk: I think that the operation is far better than ventral fixation for cases of this sort—complete procidentia. For the lesser forms I believe good results can be obtained after amputation of the cervix and Alexander's operation in place of ventral fixation. I introduced to this Society, about ten years ago, an operation of this kind. I have had a number of good results from it, but they were not cases of complete procidentia. I recommend the first-mentioned operation for complete prolapse. The age of the patient should also be taken into consideration, for it is especially applicable to those patients who have passed the child-bearing age. Had this patient not been over forty, I perhaps would not have employed this method.

Operation for shortening the Round Ligaments through the Anterior Vaginal Fornix.

Dr. J. RIDDLE GOFFE: This patient is one upon whom I operated last January for retroversion by shortening the round ligaments by anterior colpotomy. She is thirty-three years of age and has had six children, the last four and a half years ago, and she is now pregnant four months. The operation which I perform is like that recommended by Dr. Wylie, except that the ligaments are approached by way of the vagina instead of through the abdominal wall. As is my custom, the uterus was curetted and in this case a plastic operation done on the perinæum in addition to the above.

DISCUSSION.

The President appointed Drs. Polk and Cragin to examine the patient and report upon her condition.

Dr. POLK: I have examined the patient and find the uterus in ideal position at the present time. The success of the operation commends it. The result obtained is as good as that which follows Alexander's operation.

Dr. CRAGIN: I have also examined the woman and find the anterior vaginal wall in good condition. The only cicatrization which can be felt is in the anterior vaginal fornix. The position of the uterus is ideal, and the present condition of the patient is all that can be desired.

Dr. GOFFE: In this operation the vagina is incised along its anterior wall for almost its entire length, and the uterus is delivered into the vagina through this incision in order that the appendages may be reached. The procedure has been criticised, because it was thought that it might impair the strength of the anterior vaginal wall. I am very glad, therefore, to have Dr. Cragin's confirmation that no such criticism can be offered in the case before you. The gentlemen who have examined her will bear me out in the statement which she has made to them that her symptoms for which the operation was done were entirely relieved, and that she has never carried any of her children to the present stage of pregnancy with as much comfort as she has this one.

THE PRESIDENT: I think it would be very interesting to take up this subject of shortening of the round ligaments some evening for general discussion.

Carcinoma of the Uterus, Involving the Right Ureter and Rectum: Hysterectomy; Ureteral Resection and Implantation into the Bladder; Intestinal Exsection and Anastomosis.

Dr. POLK: The specimen which I present shows a kidney, ureter, bladder, and a section of the rectum of a patient upon whom I operated two years ago for carcinoma of the lower segment of the uterus. The case appeared to be a good one for extirpation of the uterus from above, and therefore this was done. A free incision was made and the anterior branch of the internal iliac artery was ligated, thus securing a bloodless field along the line of the ureter. The branches of the middle hæmorrhoidal and inferior mesenteric were also ligated in order to avoid the bleeding which takes place at the junction of the uterus and vagina, latero-posteriorly. The pelvic floor was then searched and cleansed of suspicious tissue and the uterus removed, amputating the vagina between the middle and upper thirds. The question then came up as to the treatment of the ureters. These organs are very easily separated from their attachments, and in dissecting them out I found no disease whatever on the left; on the right, however, the ureter ran through a small nodule of carcinomatous tissue and the sheath of the ureter was involved for a distance of about half an inch. I resected about an inch of the ureter and fortunately had enough left on the renal side to bring it down and insert it into an incision made in the bladder an inch above the normal site. Union took place and the woman recovered. About a year later she developed intestinal obstruction. I again opened the abdomen and found that a carcinomatous anular constriction of the sigmoid flexure had taken place, obstruction being complete. I therefore exsected two and a half or three inches of the gut and made an end-to-end anastomosis. The patient, however, died on the fifth day from peritonitis. The operation had been too long deferred, the conditions were unfavorable, and she could not stand the shock. The specimen plainly shows the ring of carcinomatous tissue which caused the constriction of the bowel. The successful implantation of the ureter into the bladder is an interesting feature of the case. End-to-end union of the ureter is even better than this method, for it gives a more lasting effect. You will notice that there is dilatation of the upper part of the ureter, due to an increasing constriction at the point of union with bladder. The pelvis of the kidney, however, is normal. The constriction of the ureter had not progressed enough to interfere with the function of the kidney, but it would have done so

sooner or later, for which reason I would not use this method if end-to-end union were feasible.

Removal of Right Half of Thyroid Gland for Cystic Goitre.

Dr. POLK: This other specimen is the right half of the thyroid gland which I removed from a woman who had a large cystic goitre, involving both lobes of the thyroid, and which not only constituted a great disfigurement but interfered with the woman's general well-being. Owing to the shape of the mass, I made a semilunar incision, following first the folds of the skin of the neck and then descending on median line until the sternum was reached, and removed this half of the gland, working within the outer capsule, which is the safer and easier method (intrafascial extirpation). I tied as I went, and when I got down to the isthmus I ligated *en masse*. An interesting feature of the case is that, notwithstanding the fact that I left one-half of the gland, the woman at end of two weeks developed evidences of athyroidism—absence of the necessary quantity of thyroid secretion—and I was obliged to give her daily five grains of thyroid extract. This has controlled her symptoms, and she returned home in a better state of health than she had enjoyed for years. It was very interesting to note the gradual development of the characteristic symptoms—the apprehension and nervousness—until now they became so prominent that she was afraid if anybody came near her. After she had been taking the extract a few days, she became calm and serene.

Dr. A. PALMER DUDLEY: I want to make a few remarks in connection with these cases of Dr. Polk. First, in regard to ureteral anastomosis. While he was speaking the idea occurred to me that when there is any danger of leakage after such an operation, this could be avoided by making a lumbar incision through which the kidney could be drained while union of the anastomosis is taking place. I have seen a kidney bisected and sewed up again and returned, and I do not see why we cannot advance a little further and drain the kidney through the lumbar region. I simply raise this question because of the fact that we are to-day doing such wonderful work on the kidney that almost anything seems possible. I recently saw a case in which the X-ray had been employed in order to ascertain whether or not there was a stone in the kidney. The skiagraph did not show any, but the surgeon in charge of the case had that diagnosis fixed in his mind and insisted that there must be a stone. He therefore bisected the kidney to its pelvis and, of course, found nothing. He promptly closed the incision in the kidney and the patient recovered without any trouble.

In regard to the second case, I was never more delighted in my life than when I saw Dr. Polk show that specimen and learned that he had stepped out from the specialty of gynæcology—which, in my mind, is no longer a specialty—to do an operation which is usually done by the general surgeon. The general surgeon, nowadays, does our work, and I do not see why we should not do his, especially as we have such good results when we do undertake anything of that kind.

Dr. GOFFE: I had the good fortune to witness this operation, and also saw the woman when she was about to leave the hospital for her home. At that time she was in splendid health of body and mind, and remarked that she never felt better in her life.

Dr. POLK: In reply to Dr. Dudley's suggestion, I would say that in this form of ureteral anastomosis made anywhere below the brim of the pelvis, we are working beneath the peritonæum, for it is lifted as the ureter is dissected out, and we can get drainage through the vagina; therefore, lumbar drainage is not necessary. I did try this lumbar drainage in one case in which the ureter had been severed in supravaginal hysterectomy. The woman died in a few days as a result of shock. I found it perfectly feasible to drain in this way, but, as I have said, it is not necessary where the union is made below the brim of the pelvis.

Suppurating Fibroid Tumor.

Dr. HANKS: I show a specimen which is an uneven fibroid tumor of the uterus of about two pounds weight. On careful examination before operation a diagnosis of fixed uterus and fibroid tumor was made out. The tumor being so fixed, it was decided to operate from above. On reaching the tumor one large nodule was found to be filled with fluid, and it was considered that a mistake had been made and that it was an ovarian abscess, covered with recent exudate. I decided to open the abscess by a posterior section, and pack and drain if all could not be easily removed. On making the section through the vagina into Douglas' pouch, the finger found only a small fibroid mass, and the patient was again placed in Trendelenburg's position and the abscess tapped and washed out and then the tumor was completely enucleated and removed. No pedicle or no arteries required to be tied. I therefore judge that we had an uneven or a three-lobuled, fibroid tumor, which has been separated from the uterus by rotation upon its pedicle, and the exudate was thrown out in Nature's effort to nourish the tumor after the pedicle had been twisted.

It shows that fibroid tumors of the uterus, even though pedunculated and small, are not necessarily benign—or, better, harmless.

Fibroid Tumor obstructing Labor.

Dr. GEORGE H. MALLETT: This tumor I removed from a young woman about one month ago. She had then been in labor twelve hours in her first confinement, and had made no progress. Her family physician sent for me, and in my absence Dr. E. P. Mallett responded. It was at once found that the cause of the delay was a large tumor which filled the whole pelvis and crowded the uterus up so high that the cervix was way up under the symphysis. Chloroform was given and the patient placed in the Trendelenberg posture on the bed by means of a chair turned upside down. In this way the tumor was pushed up out of the way and the woman delivered of a live child. Three months later I removed this tumor by abdominal incision. It appears to be a dermoid cyst coalesced with a fibroid. It was attached by a pedicle to the back of the uterus and joined to the ovary on the right side. The woman made a complete recovery. The special points of interest connected with the case are the novel way in which the Trendelenburg posture was employed and the character of the tumor which I will now incise. The incision shows the tumor to be a fibroid of the uterus.

DISCUSSION.

Dr. CRAGIN: Not long ago I saw a woman who was six months pregnant, and who had a tumor which was too large to be pushed up. Therefore I removed it *per vaginam*, and the patient made a good recovery and went on to full term.

Uterine Hydatids: Diagnosis and Treatment.

BY ROBERT A. MURRAY, M.D.

(See page 164.)

DISCUSSION.

Dr. POLK: I feel that this paper should not be allowed to pass without a remark in regard to treatment. The condition is not a very common one, and the author is fortunate in collecting four such interesting cases. He has also well brought out the benefit to be derived from prompt treatment and aseptic methods. If the uterus is emptied without delay and under aseptic surgical principles, as suggested

by the author, the procedure is no longer the dangerous one it was considered to be years ago, and good results are sure to follow.

Dr. HERMAN L. COLLYER: Hydatid degeneration of the chorion is not so rare as is generally supposed. Many of these cases get well without treatment, the mass being discharged spontaneously. I have in mind the case of a young, unmarried girl who came to the Polyclinic several years ago, presenting the appearance of impending miscarriage. Upon being urged to submit to an operation, she left the clinic and stayed away for a week, at the end of which time she returned, saying that a large mass, some of which she brought me, had come away, and the bleeding then ceased. I also saw another case which took the same course, and know of several others in which the attending physician had no trouble in cleaning out the uterus with his fingers or curette and the patients got well. Of course, a surgically clean operation is to be recommended whenever possible. It goes to show that in patients who present a sanious discharge and other symptoms of threatened miscarriage, the uterus should be emptied at once. Polypoid degeneration in the lower segment of the uterus may be mistaken for this condition. I have had two cases of this kind in which the similarity was caused by small polypi attached above the internal os.

DISCUSSION ON

Fibroid Tumors of the Uterus: (a) *When is Operation Justifiable?* (b) *What Character of Operation is Preferable, and when?*

BY GEORGE TUCKER HARRISON, M.D.

(See page 171.)

GENERAL DISCUSSION.

Dr. POLK: I think we all will agree with Dr. Harrison in regard to the limitations which should be placed upon operative interference. I believe that there are a large number of fibroid tumors which, in their early phase and particularly in young women, do not demand operation. I also agree with him as to the indications for operation, *i. e.*, excessive bleeding, great pain, rapidity of growth, and so on.

Before I speak of the operation itself, I desire to say a few words in regard to the medical treatment of these cases, because I believe that a good deal can be done in this way, and I also wish to refer to the use of thyroid extract. During the last year I have employed it in fifteen cases and have obtained good results in all but one, although these

were not equally good in all. The general effect has been to benefit the health of the patient and to check the growth of the tumor. In some cases it has almost seemed to shrink, but this impression is often deceptive. In five of these cases the impression made upon me was that there has been a distinct diminution in size, and in two I think I can say, without deceiving myself, that there has been an actual diminution. Ergot and thyroid extract will retard the growth of these tumors. It should be begun early and continued long; in fact, indefinitely. The extract is well borne by these patients if they are watched, and if it is employed within the limitations which belong to its use in myxœdema. The same cardiac indications are to be taken into consideration. A number of experiments with thyroid extract have been made on hens in regard to egg-laying, and it was found that hens fed on thyroid were much better nourished, fatter, and produced more eggs than those who were not given the thyroid. It would seem therefore, that this extract has some very decided tissue-building property. Some patients, especially the fibroid cases, can bear two and a half to as much as seven and a half grains of the extract in twenty-four hours. The effect upon the bleeding will differ, and it is not always to be relied upon to stop it; in which case there is no reason why we should not employ the curette, as suggested by Dr. Harrison.

Now, in regard to operation. As general principles, we can lay down the following:

1. If you have a tumor which is not larger than a four months' pregnancy, and in a woman who is not fat, who has a roomy and shallow pelvis and a roomy vagina, it is best to remove it through the vagina, even if morcellation has to be employed.

2. In opposite conditions, it is best removed from above. A tumor which is larger than a four months' pregnancy should never be touched from below.

In dealing with large tumors, the patients are in better condition when the tumor is removed from above. It seems to me that the best operation is total extirpation, although when there is a narrow, clean cervix, one which we can easily dilate, I think the operation of Dr. Goffe is perhaps preferable.

Now, the broader question as to whether we should operate on all of these cases has already been answered by Dr. Harrison. Closely connected with this is the question of environment. Some women are so placed that they must have these tumors out. Under such circumstances, they must be put in a different category. I believe this, however: Every woman who has a fibroid tumor should be under observa-

tion. While it is not a common thing to have carcinoma and other changes in fibroid tumors, they, as well as the accidents which belong to the condition, are all of sufficient account to compel us to keep these cases under observation. It is not necessary to make invalids of them, but they should be kept under observation.

In considering the advisability of operation, the ultimate effect upon the patient must not be lost sight of. For instance, it seems to me that it is a poor exchange for a woman to have her fibroid tumor removed if it is going to leave her with intestinal adhesions. In these cases special care should be exercised not to leave any raw surfaces. The time has gone by when we were satisfied with merely removing these tumors, leaving any kind of stumps. We have not done the patient justice unless an ideal operation is done. Unless we take this point into consideration when the operative procedure is proposed, we have not done our duty by the patient. We must leave the patient's intestinal tract in just as good a condition as it was before the operation: and if we cannot do this, it is well for us to keep our hands off. If we cannot make a perfect, an ideal operation, we should think twice before operating. Of course, there are many cases in which the woman's life is so jeopardized by the presence of a tumor that almost any change in her condition is an improvement. In such cases an operation which cannot be made ideal is justifiable.

Dr. CLEMENT CLEVELAND: There are only one or two points upon which I shall touch. I do not think there is any antagonism among us. We are all as conservative as Dr. Harrison, even those of us who are operating a good deal. There are, of course, many cases of fibroid which do well when left alone or treated medicinally. I have in mind a number of cases which I have watched for a number of years and they have gone on well; in some the tumor has grown, in others it has not increased in size. I recall a case where an operation was attempted for the relief of profuse hæmorrhage. After the uterus had been curetted, the abdomen was opened. It was then decided to abandon the operation. (This was ten or fifteen years ago, and the technique was not what it is to-day). The woman recovered and was apparently much benefited. The tumor is still there, and reaches as high as the umbilicus. I have now under observation an interesting case of fibroid tumor. The woman has had profuse hæmorrhages. The uterus is about the size of a three-months pregnancy, and the tumor is in the anterior wall. I dilated and curetted the uterine cavity, and then passed my finger into the organ but could not feel any tumor projecting into its cavity. For a month or two the patient did not flow so

much. Later the flow began again. She was again curetted without anything being removed. Subsequently she flowed very profusely every two or three weeks and became quite anæmic. Yet this tumor has not grown enough to cause me to insist upon its removal. I think she will probably go on until her monopause (she is now nearly forty) without any serious trouble, as the menstrual flow is kept from becoming profuse by thorough application of the tampon during the first three days.

In regard to operation in these cases, I agree with Dr. Polk. I do a great deal of work through the vagina and always operate by this method when possible; it is much less severe on the woman. Often after vaginal hysterectomy the patient will lie comfortably in bed as if nothing had been done. I have never practiced supravaginal amputation of the uterus. I believe in total extirpation. I have never seen a case of prolapsed vagina after total extirpation. I have heard of prolapsus after supravaginal amputation, but I do not think this is so likely to occur after total extirpation, because the floor of the pelvis is made so solid that it is impossible for this to occur. Drainage, too, is more perfect by this method. I have never been able to convince myself that it is best to leave any part of the uterus.

I have been interested of late years in the comparative results of employing ligatures and forceps. I once gave up the use of the latter but have returned to them. I noticed that a good many of my cases were very slow in convalescing after the use of ligatures; the stumps were very much larger than when forceps were used, and sometimes the ligatures came away late. Moreover, the stumps themselves were long in sloughing and a mild form of sepsis went on all the time they were in the pelvis. With the forceps very little tissue is left to slough, comparatively speaking, and what there is comes away very rapidly and the patients convalesce more quickly. I have also found that where the stumps have been a long time in sloughing away there is apt to be quite a deep cavity where the cervix used to exist.

Fibroid Tumors of the Uterus: (b) *What Character of Operation is Preferable, and when?*

By H. T. Hanks, M.D.

(See page 175.)

Dr. Goffe: Probably no opinion which has been formulated and promulgated by this Society in years is of as much value as the wise conservative position maintained here to-night in regard to the treat-

ment of fibroid tumors of the uterus. The Society has always been conservative upon this subject, but within my recollection at no time have the indications for operative interference in these cases been so well defined as they have to-night. The touchstone of the whole subject consists in the individualization of the cases, and the determining factors are the age of the patient, the size and rapidity of growth of the tumor, the symptoms, both direct and mechanical, and the environment of the woman.

During the early summer Dr. Polk told me of his use of the thyroid extract in these cases, and I have been employing it myself this autumn. In one case, which came to me in October, there was a fibroid tumor of the uterus with three different nodules upon the fundus equivalent in size to that of my two fists. The woman suffered acute pain, but had no hæmorrhage. I placed her upon thyroid extract, five grains three times a day, and inside of four weeks she was absolutely cured of pain. Her general health improved also, but this could be attributed to the relief from suffering and not especially to the effect of the drug. She is still taking the thyroid extract with which I keep her supplied. Shortly after this case came under observation there appeared at the clinic a very large woman with an enormous development of adipose tissue, and I decided to put her upon thyroid in order to reduce her avoirdupois. The following is a letter in which she describes the improvement in her condition since taking the remedy:

"December 3, 1897.

"DEAR DOCTOR: I am forty-one years of age and have had thirteen children. My average weight was 130 to 150 pounds until I was thirty-nine, from which time I steadily increased in weight until the 29th of October, when I weighed 300 pounds; bust measure, 54 inches; waist, 46 inches; hips, 59 inches; neck, 19 inches. I could not breathe. The pain in my head and temples was fierce. I could not walk one block, neither could I sweep or wash or do anything but sew, for the want of breath. I could scarcely sleep I was so choked. Now I have been under treatment for one month, and feel like a different person. I have no pain at all and can breathe freely, can do my housework easily, can go up three pairs of stairs without difficulty, and have walked fifteen blocks and back without trouble. My weight now is 280 pounds; bust measure, 51 inches; waist, 44 inches; hips, 55; neck, 17½ inches."

I simply speak of this case to show the beneficial effect of the agent upon abnormal development of adipose tissue.

In regard to the technique of operation when such is indicated, no one procedure is applicable to all cases. The prognosis in the event of recovery must be balanced against the prognosis in case of non-interference. As has been said, a patient is made worse by exchanging a fibroid, for example, for intestinal adhesions or other untoward sequelæ. In order to avoid intestinal adhesions, it seems to me that no operation is as good as supravaginal hysterectomy, covering over all raw surfaces with peritonæal flaps as done by my method. Unfortunately, an impression seems to prevail among some of my friends that my operation of supravaginal hysterectomy for fibroid tumors is necessarily accompanied by suppuration during convalescence. This is an error. The impression has doubtless arisen from the fact that in the first four cases which were reported in my original paper, the uterine arteries were included in the cervical tissue. Dr. Haywood Smith, of London, and Dr. Baer, of Philadelphia, modified this by suggesting that the ligature be placed upon the uterine artery as is done in total hysterectomy. I immediately adopted this suggestion with the result that all suppuration is avoided. The operation which I do is not to be compared with any in regard to smoothness of convalescence. In my last ten cases recovery has been so smooth that I have not touched one of them except to remove the abdominal stitches until the final examination preparatory to discharging the patient, the nurse assuming entire charge of the after-treatment. I use catgut ligatures, No. 8, prepared by Van Horne, and I do not dilate the cervix, nor do I do anything more than pass a little carbolic acid after amputating the uterus at the internal os. All the tissues of the stump and the stumps of the broad ligaments are covered by the peritonæal flaps. In total hysterectomy I also use catgut ligatures, whether I operate through the abdomen or through the vagina. I do not use forceps at all. All these cases are cared for by my nurse, and are not treated or examined by me until they are ready to leave the hospital. In total hysterectomy the wound in the vagina is left open and packed with gauze, the nurse drawing out the latter gradually, from day to day. When it is entirely removed warm boracic acid douches are given daily.

Dr. CRAGIN: The thing which has impressed me during the discussion is this: The more we know about fibroids the more we realize that they are not always the benign tumors we used to think them; that they sometimes suppurate, as shown here to-night; that they sometimes press on the ureter and cause serious disease of the kidney; the more, I say, we have learned of the troubles resulting from fibroids the more our facilities in caring for them have advanced, es-

pecially in a surgical way, as shown by improved methods of performing abdominal hysterectomy and vaginal hysterectomy, myomectomy by the abdominal or vaginal route, and so on. And now if we have in thyroid extract an agent which will relieve the symptoms caused by fibroid tumors, we can certainly say that our means of relief have kept pace with our knowledge of their results.

Dr. DUDLEY: The ground has been so well covered that I have but little to add except a few words in regard to the indications for operating. When is operation justifiable? Whenever the condition of fibroid tumor is such that it brings the patient to your office. She is in no hurry to come there, but does so because she is an invalid and because she has symptoms from which she desires relief. Either she has hæmorrhage, increased menstruation, to such an extent that she cannot make up the loss in the intervening three or four weeks and becomes anæmic; or, if she has no hæmorrhage, she has pain, positive or reflex, which is often so intense as to incapacitate her; and it is for these reasons that she comes to us. We make an examination, and find out the cause which has made the woman an invalid—a fibroid tumor, either intra-uterine, mural, peritonæal, sessile, multiple or simple. If this tumor has made her an invalid, operation is justifiable.

The character of the operation to be employed depends *absolutely* upon the indivdual case. If it is an intra-uterine fibroid which you can reach through the vagina, well and good. If it is a mural fibroid occupying the body of the uterus, and if the patient is a virgin, another form of operation is called for—possibly myomectomy, removal of the tumor, leaving the uterus and its appendages, especially if the patient is a young woman. If such a tumor exists in a single woman, who is near the menopause, still another form of operation is indicated. Multiple fibroid in a single woman calls for supravaginal hysterectomy because it is easier to get such tumors out through the abdomen than through the vagina. It is in these cases that the operation of Dr. Goffe is applicable, which operation is known in Philadelphia as Dr. Baer's and in California as mine. In women with flabby abdominal walls, complete hysterectomy can easily be done. In cases of small fibroid the vaginal operation is much preferable. However, we cannot lay down any rule which will govern the radical surgical treatment of fibroid tumors. The operation which best suits the case should be employed.

In regard to the medical treatment of these cases, it is understood that medicinal treatment will first be tried before operation is decided upon. If thyroid extract will do what is claimed for it, it certainly will

be a boon, but I question whether the effect of the drug is on the fibrous tissue or on the cellular tissue of the body. Dr. Goffe's second case would seem to indicate that it is on the cellular tissue.

Dr. MALCOLM MCLEAN: According to my estimate of these cases, it is best to begin with medical treatment. If the symptoms persist in spite of this, then operation can be decided upon, and the operation which best suits that particular case should be chosen. I myself have a strong preference for the suprapubic operation, possibly because I have had more experience with it than with the vaginal operation.

Dr. PHILANDER A. HARRIS, of Paterson, N. J. (By invitation): I only wish to say that I am practically in accord with all which has been said regarding myoma uteri, and that I am very gratified to hear this long, interesting and valuable discussion. There is one point which has been mentioned, which seems to be a little different from my practice in the treatment of these cases. I refer to the use of the curette. I think curetting in cases of fibroid of the uterus is only now and then attended with good results and often with danger. I do not know what has been the experience of others in this regard, but my own has been unfortunate, and I no longer use the curette in cases of myoma of any size.

Dr. ROBERT A. MURRAY: I wish to call attention to the fact that there are many patients with fibroid tumors who will not submit to operation, and I have known many such who were carried along very comfortably by having their symptoms relieved by medical treatment. Under such circumstances it is certainly best to avoid operation. I have employed hydrastis to check hæmorrhage in these cases with much better results than I have obtained from the use of ergot. The latter causes such intense pain that often the patient cannot endure it, and hydrastis does not produce this effect. It should be given at the menstrual period. I have now under observation a young woman who holds a responsible position in one of the large retail stores. She has a large fibroid and suffers from profuse hæmorrhage, and yet under medical treatment she is able to do her work and has not lost a day in the past year. I have given her hydrastis, ergot, and thyroid extract. An unusual feature of the case is that the girl menstruated first when she was two years of age.

THE PRESIDENT: I wish to thank the gentlemen for responding to the call of my able assistant, the Secretary. The discussion has been a very interesting one. I think the few differences of opinion may be attributed to the kind of practice a man is engaged in. For instance, a man in general practice may, and often does, see many cases of

fibroid tumor which do well without operation; whereas, a man who has a large office-consultation practice sees more of those who do require operation, for they are generally brought to him because they have symptoms which cannot be relieved in any other way. Dr. Cragin has touched upon the line in which advance will be made when he said that we know more about fibroid tumors now than we did years ago. In those days we were permitted to operate only on very bad cases, whereas we now know what cases need operation and how the symptoms can be relieved in other ways, and we also know that it is the complication which accompanies these tumors which makes operation necessary. We have also learned that the menopause has a bad effect in these cases, contrary to the old idea, for it rapidly increases the tendency to *degeneration.* A fibromata is a degenerate affair, and is often associated with malignant disease, if it does not really turn into a cancer. If we make any progress in our knowledge of these growths and their treatment, it will be as a result of close study of the subject and better results will be obtained by operation when a scientific selection of cases is made before surgical treatment is instituted.

I brought up this specimen to show you, a fibroid tumor removed from a woman recently. The patient had been curetted two or three times in the hospital by an eminent general surgeon, and there was then no evidence of tumor detected by the surgeon. The case, a few weeks later, fell into my hands, and I found these tumors, and at once decided to operate.

The patient was about forty years. Has suffered some local pain, but has become exceedingly nervous, and at times depressed and unable to work or follow her profession of music. Was willing to have any operation that will cure her troubles. Although the tumors can be made out, they are high in the fundus, and, as the patient is quite fat, it can readily be understood how a general surgeon might fail to detect them. The diagnosis is often as important as the operator, as this case proved, for the patient's condition fully justified the hysterectomy that was done.

Dr. POLK: Allow me to refer to one subject in connection with fibroid tumors of the uterus, which has not been touched upon. I allude to the neccssity of endeavoring to perfect the operation of myomectomy. We now have the problem before us. The ill results of the past can now be avoided, and perfection will come in the way of careful selection of cases.

Official Transactions.

LE ROY BROUN, *Secretary.*

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, December 2, 1897.

The *President*, E. E. MONTGOMERY, M. D., in the Chair.

The Question of Pelvic Support.

BY JOSEPH EASTMAN, M.D., INDIANAPOLIS.

(See page 144.)

DISCUSSION.

DR. J. M. BALDY: The gist of the appeal of our visitor seems to me to lie in the title of his paper, The Question of Pelvic Support, and is the only phase of the paper that calls for discussion. It is a question in surgery which has appealed to me for some time to be a most important one, and one which has been, to a very large extent, overlooked in the rush for new operations and the lessening of the mortality of old operations. We have looked too little to the ultimate results of the operations which we have come to look upon as settled and fixed for all time. Not only ovariotomy, but the still newer operation of hysterectomy, as referred to by Dr. Eastman. There is no question that the pelvic supports are interfered with by an operative procedure on either one or both broad ligaments, and that the pelvic support is interfered with very seriously, so much so that we produce not infrequently a condition of affairs which is probably one of the hardest that we gynæcologists have to treat; viz., a prolapse of the vagina to a greater or less extent. The broad ligaments being gone, it stands to reason the cul-de-sac portion must sag more or less. The more damage done to the broad ligaments, the more they are left alone after they have been damaged, the less chance for support and less chance that remaining organs are going to maintain their normal relations. Beyond any question a uterus amputated, the cervix allowed to retract means that the vagina retracts, contracts in the involution and shortens. The same follows complete hysterectomy, the cervix having been removed, no means having been taken to prevent this condition of affairs; the same thing follows hysterectomy by vaginal or abdominal route to a greater or less extent, and that is a more or less serious matter to the patient, and oftentimes to the family relations of the patient. The question of how to prevent this con-

dition of affairs, it seems to me, is simply a matter of detail of the technique which we have all come to look and depend upon, and Dr. Eastman has pointed out in various ways methods which can be adopted and which are perfectly feasible in practical work to prevent or at least to lessen the number of these cases which are occurring daily, and which we are all seeing in our practice, and which are coming to us from the practice of other gentlemen. Vaginal hysterectomy is pre-eminently the operation which produces most injury in this direction. It is an operation which, by almost all gentlemen favoring this method of procedure, is an operation of open wounds, wounds to heal by granulation, there is no effort at support of any kind. Removal of nature's mainstays and allowing tissues to sag down from above. The operation of vaginal hysterectomy without an effort at closure, treated by packing, is the condition which above all others predisposes to subsequent prolapse.

The operation of hysterectomy through the abdomen, allowing cervix to retract and disappear, is also a condition which predisposes to a prolapse. To minor degree ovariotomy is the same thing, followed by retrodisplacements, which are not rectified at the time of operation, or rectified in such a way as to be imperfect. In vaginal hysterectomy, if we go back to the days when we did not use clamps, before the days of the present school of French operation; if we go back to the days when we were doing good vaginal hysterectomies, when we were sewing up our lacerations, replacing tissues, bunching them together and stitching them, we were arriving at results in preventing prolapse, to which we will have to return, and as Dr. Eastman has remarked, numbers of the hysterectomists of to-day are returning to this ground.

Such work is infinitely easier of accomplishment from above than below. It is a simple matter to place ligatures in the broad ligament so as to take in the ovarian artery and round ligament in one bunch instead of using multiple ligatures for the same purpose, which is the recent fad, and which I have always held is exceedingly bad teaching. It allows a long, stretched-out broad ligament, and dropping down of the vagina. By the old bunched method of ligature, but two ligatures are required on each side of the uterus in hysterectomy, and the consequent shortening of the broad ligaments hold the vaginal vault up to a higher level. If now, in addition to this, the ovarian stumps are attached from each side to the cervical stump in the centre, better support is secured to the vaginal vault than primarily existed. Or, the cervical stump may be stitched to the abdominal wall itself in some cases in order to secure still better support.

DR. J. M. FISHER: The two things that impress me most in Dr. Eastman's paper are the frequency of cystocele and rectocele following the removal of the uterus, and the fact that after the removal of the appendages in a certain proportion of cases the occurrence of menstruation indicated "life," and therefore a condition of the pelvic structures unlike the atrophic changes which generally take place in connection with these structures after more radical procedures. The uterus no doubt is a very important structure as a part of proper pelvic support. In our study of this subject we must consider all the pelvic organs in their mutual relation to each other, as well as the means by which they are held in position. We know that these structures are embedded in the pelvis in a mass of connective tissue, that they are covered by peritonæum, and that below the peritonæum and connective tissue is the continuous muscular vaginal roof. Now, then, the pelvic peritonæum is very largely concerned in the support of the pelvic structures. In the cadaver, after removing the connective tissue and the anterior vaginal wall, the peritonæum still holds all of the structures that are attached to it from below—the uterus, bladder, and a part of the rectum—in proper position, and this obtains even after the pelvic diaphragm has been removed. This is due to the close attachment of the peritonæum to the tissues overlying the brim of the pelvis laterally, and to the abdominal wall, upper portion of the bladder, and the urachus anteriorly, and to the rectum and the structures overlying the sacrum posteriorly. The mass of connective tissue below the peritonæum increases upon approaching the sides of the uterus, and here measures from three-fourths to one inch in thickness, forming an elastic cushion that has much to do in maintaining the uterus and other structures of the pelvis in their normally mobile positions. The most important supporting structure of the pelvic organs, however, is the vaginal roof. This is well illustrated by introducing a Sims' speculum and retracting the posterior vaginal wall without resulting descent of the anterior vaginal wall. The muscular structure of the vagina posteriorly enters into the formation of the utero-sacral ligaments; centrally it is continuous with the cervix, while anteriorly it is very closely attached to the base of the bladder and is indirectly held in position by the attachment of bladder to the posterior surface of the symphysis. It is quite clear to my mind that pelvic support depends very largely upon the continuity of this vaginal roof. In extirpation of the uterus the integrity of this structure in its continuity is destroyed and more contraction or retraction of its broken musculature takes place with consequent loss of support and resultant rectocele and cystocele. Another very important

point to consider is, that in removing the appendages the ovarian arteries alone are tied, but in removing the uterus in connection with the appendages both ovarian and uterine arteries are ligated, thus cutting off the blood supply within the pelvis more or less completely, resulting in atrophy of the remaining supporting structures, and a consequent tendency to prolapse of rectum and bladder.

Dr. SHOEMAKER: It is interesting to note the development of thought in this relation. Formerly we heard everything of pelvic support from below. First, by the pessary, then by the perinæum operation. Then came suspension from above, and now, in the course of development, we are learning that we must use both methods to secure good results.

Dr. JOSEPH EASTMAN: I have very little to say except to thank the gentlemen who have kindly taken an interest in the remarks included in the paper. I am quite sure that the point I attempted to make in reference to what the Frenchmen have attempted to teach us, as Dr. Baldy remarked, is appreciated now all over America. Those gentlemen have really carried coals to Newcastle. We are beginning to realize that what they have taught us we must unlearn, and go back to our former methods and use common sense, closing a vaginal wound whenever we can, precisely as we would close an abdominal wound.

I thank the gentlemen again for their attention.

The Best Way of Treating Pus Collections in the Pelvis; The Abdominal vs. the Pelvic Route.

BY JOSEPH TABER JOHNSON, M.D., WASHINGTON, D. C.

(See page 179.)

DISCUSSION.

Dr. W. EASTERLEY ASHTON: I listened with a great deal of interest to Dr. Johnson's paper, which has certainly covered the ground of vaginal operations very thoroughly, and represents very clearly the views of those gentlemen who are enthusiasts in that work. The question asked by Dr. Baldy, previous to discussion, that Dr. Johnson define what he means by accumulations of pus within the pelvis demanding operation is, I think, a very timely one. In other words, the doctor speaks in his paper of suitable cases for the vaginal route; this is just where the difficulty arises, as it is impossible to say which are and

which are not the suitable cases. Now let me illustrate: About ten days ago I operated upon a young girl from the interior of the State. It looked like a very clear case of pus within the pelvis, like all these pus accumulations involving the tubes, they were post-uterine. I don't know that I have ever met with a case where the accumulation of pus was not low down. This case apparently was a very simple one. When I opened I found double tubo-ovarian abscesses with the head of the colon and appendix adherent to the bladder. The adhesions were so strong that I was obliged to make an opening into the colon. On the other side the tubo-ovarian abscess was adherent to the ileum, I had to open up the ileum and stitch. This is a case in point; it was impossible for me to know that the colon was attached to the bladder, it was impossible for me to know that the ileum was attached on the left side, and it would have been impossible in this case for a surgeon to operate by the vaginal route and do good surgery.

In regard to the question of shock following abdominal sections, I believe that is a question which depends upon the operator. There are operators who are very slow in doing an abdominal operation, and their patients are certain to have shock; in other words, an operator who is expert and experienced enough to do the majority of these operations within thirty minutes has no. reason to fear shock. The abdominal operation is a harder operation, it needs more care than the vaginal operation for the reason that the vaginal route is incomplete. The vaginal route does not pretend in the majority of instances to get rid of the disease, but simply to open up and get rid of free pus and then to drain, consequently under these circumstances the operation is a short one—it is about on a par with opening an extraperitonæal abscess, due to appendicitis—simply open, flush and drain. The question of shock therefore in abdominal cases depends on the expertness of the individual operator, and I do not think it is fair that the abdominal route should be held up as one liable to be followed by shock. Now Dr. Johnson speaks of patients objecting to the abdominal incision. Personally, I have never had any trouble of this kind. My patients, as a rule, are intelligent, and take my advice. I think some men control their patients better than others. As a rule, if the surgeon controls them well they are perfectly willing to submit and have confidence in him. In reference to mortality, I believe mortality in abdominal operation depends not so much upon shock as upon the character of the pus. It is a well-known fact that in the majority of tubal abscesses the pus is sterile. I believe in a large number of cases in which the pus is examined this will prove to be the case. I always feel after a pus operation

that the outcome of the case can be predicted on the result of bacteriological examination; if the pus is sterile the patient will get well; if not, I believe, in the majority of cases, nothing in the world will save the patient. Again, the doctor speaks of fæcal fistulæ following the abdominal operation. It is unfair to compare the two operations, becauses they have nothing in common. I believe here, too, it is a question of the personality of the operator. If the operator does his work carefully by the abdominal route, making use of the Trendelenburg posture, examining carefully all suspicious spots upon the bowel, he will get no fæcal fistulæ. I operate by the abdominal route, and have not seen a fæcal fistula for five years. Hardly a month passes, however, that I am not compelled frequently to suture the intestines before completing an operation, so that I believe in those cases where a fæcal fistula occurs it is faulty technique and not due to the operation itself. The doctor speaks of Dr. Kelly's statistics of thirteen cases of ectopic gestation operated on by the vaginal route without a death, which were reported in New York two years ago at the meeting of the American Gynæcological Society. This statement is incorrect, as one case died, a patient I was interested in. Dr. Kelly's real death rate therefore in operations by the vaginal route is one in thirteen.

As to Dr. Johnson's statement, that we must investigate the condition of the pelvis by first making an opening in the abdominal wall and introducing the finger into the abdomen: There are cases in which, even when it is done, we are unable to make a diagnosis, and we cannot tell the extent of the disease until we get well on in the operation. I have seen cases again and again where adhesions were so great and disturbance in the normal anatomy so marked that I simply did not know where I was. I could not even feel the uterus, and under these circumstances diagnosis was not clear until the patient was raised in the Trendelenburg posture and adhesions separated, when the normal lay of the land was determined. If this is so in the abdominal route, I would like to know how the doctor could make a diagnosis which is worth anything where the finger simply is introduced through the vagina?

Dr. WILMER KRUSEN: I have enjoyed very much Dr. Johnson's paper, and feel that I can concur very heartily in the greater part of the paper as read. The selection of the method of treating suppurative diseases of the pelvis will be largely influenced by the dexterity and skill of the individual operator and the environment of the patient. Some of us who are young men are not always able to select the best surroundings for our patients. Sometimes we have to operate in private

houses, and private houses are not always palatial. The first thing is to locate the situation of the pus. If the pus is tubal or ovarian, the inflammatory mass being in a position which is suitable for enucleation, possibly the abdominal route should be selected; but there are a large number of cases in which there has been suppurative perimetritis, where we have a pus collection bulging into the vagina, possibly from Douglas' cul-de-sac, or from the broad ligaments of either side. Where a large collection is bulging into the vagina, it does not seem rational, common-sense surgery to open the abdomen and to interfere with the barrier which nature has made, shutting off this pus collection from the general peritonæal cavity. If we have at heart the best interests of our patient, we will save her with the least sexual mutilation possible. In that case the vaginal incision should certainly be employed.

The question which Dr. Baldy has asked in regard to the position of the pus also suggested itself to my mind, whether Dr. Johnson meant tubal abscesses or all varieties of pus collections in the abdomen. In regard to the technique of vaginal incision, the method suggested by Laroyenne, of Lyons, of using a simple trocar and canula, or of using an aspirator, I believe should be condemned. A thorough incision should be made; an incision depending upon the position of the pus. In some cases it will be transverse, or in some cases anterior colpotomy should be selected and a free incision be made, either with a knife or the Paquelin cautery may be employed, incising the vaginal wall, and then, with scissors, enlarging the opening so that there will be no danger of not evacuating the pus. Frequently we have several purulent collections, and all of the pus cavities can be thoroughly evacuated, followed by thorough irrigation with salt solution or sterile water, and then drained with some special device, or packed with iodoform gauze. Another point that Dr. Johnson has called attention to has been the large mortality attending the selection of the abdominal operation in suppurative cases. This would be a cogent and powerful argument for the selection of the vaginal route wherever possible. We have heard many eloquent remarks this evening upon the question of pelvic support. If the pus can be evacuated through the vagina the question of pelvic support, which has occupied us during the former portion of the evening, will not give rise to so much difficulty.

Dr. J. M. BALDY: I was rather staggered by a good many statements in the paper of Dr. Johnson. I am very loath to accept as final the abdominal mortality of 15 per cent. to 25 per cent. I cannot think of a single pus case, barring those desperate acute puerperal ones operated on to save an immediate death, which has died in my hands

in three years from either sepsis or shock, the only two causes of death in which the two operations can be compared. My mortality has been almost exclusively outside of this class of cases. I do not pretend to deny or excuse a mortality in my work. I simply contend that in this particular class of cases I have better luck, and my patients get well with better after-results if abdominal section is performed (for pus) than any other class of cases I deal with, and I distinctly repudiate for skilled men a 15-per-cent. or a 5-per-cent. mortality. I cannot discuss the mortality of bunglers in connection with the proper mortality of the operation. You can get statistics all over the world from men who do not know how to operate; but that does not affect the proper mortality of the operation. The essayist says: "Why not in the future select more cases by the vaginal route than by the abdominal?" An old principle and saying is: "The proof of the pudding is in the eating," every man is going to go on his own experience irrespective of what any one can tell him, and the man who has a large experience with a certain operation, perfectly eminently satisfactory, is not going to leave it for a method which, in his experience, has not proven satisfactory to himself or his patients, and the fact that so large a proportion of operators are holding out against the vaginal craze, and the fact that so large a proportion of those who are doing vaginal work are coming back to the abdominal route, seems to me to answer the question that the vaginal operation is dying out, and will die out, except for acute or chronic accumulations of pus in the pelvis outside of tubes and ovaries, in which cases all classes of men agree on the vaginal route as the proper one. In this case the operation, however, is not an operation, unless you are ready to call vaccination an operation; it is merely the incision of an abscess, as simple as opening an abscess in any other part of the body. It is absurd to discuss the relative merits of opening an abscess and abdominal section for the removal of hopelessly diseased parts.

As to the question of shock, I can only say, I don't see the necessity for the long abdominal operations Dr. Johnson speaks of; if I make my operation two hours long, I expect shock. If I send my patient to bed within half an hour or an hour, I feel if there is no septic pus she will recover; I look with confidence for the patient to die if the pus is virulently septic, I care not what method is used. Nothing we can do will avert this termination.

I was astounded at the statements made that there are no sequelæ following vaginal sections. When I look back and think of Jacob's admissions, and glance over his papers and see vaginal and rectal

fistulæ, and see Segond's papers and his admissions, and that of all other vaginal operators, it is a matter of astonishment that the statement is made to-day that there are no sequelæ. Sequelæ following abdominal operations do not begin to compare in frequency or seriousness. Hernias, I admit, but they are unquestionably largely lessened in number. Fæcal fistulæ, I have seen but one in five years. In that case I saw the fistula, before operating, with rectoscope. I operated to get rid of it. Fæcal fistula followed my failure to close the opening, so I curetted and drained, and packed, etc., and it got well. The patient recovered and gained fifty pounds. To-day she is a well woman, attending to her duties as a wife and bringing up her family. Vaginal work could have done nothing.

There are dozens and dozens of such cases where you cannot make an absolute diagnosis. It is very pretty to say this class of cases are adapted to the vaginal route, and this class is applicable to the abdominal route; but I defy any man to make these fine distinctions in a large proportion of cases. It is an impossibility, yet we find the vaginal men making claims that they can make this distinction when the rest of us acknowledge that frequently we cannot do it, do not attempt to do it.

Dr. G. E. SHOEMAKER: Dr. Johnson, in his admirable and very interesting paper, referred to a class of statistics which have come from general hospitals in regard to the high mortality in pus cases, but these statistics should not pass without comment. In many general hospitals there is no trained abdominal surgeon operating, and all men, with all kinds of training, are doing occasional abdominal surgery. In other hospitals, for example, in three active hospitals in this city, men not on the hospital staff at all are allowed to operate upon patients occupying private rooms, and their statistics go to swell the general mortality of those hospitals. Reports from such hospitals do not represent the work of good, thoroughly trained abdominal operators, who are operating in separate rooms, with separate assistants and instruments, and with a separation of cases from the general sources of infection which obtain in a large general hospital. I was much surprised at the general statement that there is a mortality of 15 to 25 per cent. in pus cases. Certainly that has not been my own experience. I feel that a pus case which is capable of enucleation is pretty sure to get well. After a very large pus accumulation I think many men will admit that drainage through the vagina, at least temporarily, is the wisest preliminary procedure.

Among cases in good hands, a 15 to 25 per cent. mortality must be

distinctly understood as not referring to all pus cases, but to a small number of desperate, profoundly septic, almost moribund cases, of which an operator will not see more than two or three a year.

Dr. EASTMAN: I have been very much interested and instructed by this discussion. I do considerable vaginal work in cases such as those to which Dr. Johnson has referred. I am in the habit of operating in the Sims position. Previous to operating I have the nurse, with the hand folded in the shape of a cone, dilate the rectum so as to pass over the knuckle and in that way obtain more space. I have a short, wide speculum and manipulate through an incision which I make in the posterior vaginal cul-de-sac. I am glad the doctor shied off from the idea of taking out the uterus in all these cases in order to get drainage. He did not steer around another point, however, quite as handsomely, and to that I shall attempt to refer. He says these sacs are absorbed or pass away in some way after the pus is allowed to escape. What sacs are these, as Dr. Baldy asks; are they old sacs, or dermoid cysts, or plastic exudate formed around coils of intestine, or what are they? When we go through the abdominal route we seek to know what these sacs are, and attempt to remove them. I am quite sure when the operator goes by the abdominal route he removes pus tubes, removes ovarian abscesses, and he sometimes finds them as I have done, in such an advanced stage of decomposition that when we see them we dare not leave them. If we would simply open up and drain by abdominal route, leaving sacs, our results will show a lower primary mortality. I saw a distinguished operator of this city, operating in St. Louis, cut through the abdominal wall and drain with gauze, leaving sacs. The patient made a primary recovery. If we do not seek to remove sacs or break up adhesions by the abdominal route any more than by the vaginal route, we would have the same primary results. Each must be a law unto itself. Diagnosis is very difficult in these cases, and it is hard indeed to know in a given case which route is best. The Trendelenburg position which enables us to see as well as feel, enables us to do definite, careful work, and is essential to success in the abdominal route.

I recently made an operation in a small cottage house. I wanted the Trendelenburg position, especially to throw the meager light from the small window down to the bottom of the pelvis. I took a chair and improvised an excellent Trendelenburg position by turning the chair upon the table, using a blanket to pad the lower round of the chair-back. This prevents injury of the popliteal vessels. So this position can be obtained in any cabin.

DR. C. P. NOBLE: Collections of pus in the pelvis should be divided into several classes. In the first place, I think a sharp distinction should be made between pus accumulations of puerperal origin and those of non-puerperal origin, especially when caused by gonorrhœa or tuberculosis. The usual cases of pus tubes or abscesses of the ovary should be distinctly separated from cases complicated by large intraperitonæal collections of pus. Abscesses which have ruptured into the bowel or bladder, or which communicate with the skin or vagina by sinuses, must also be separated from the common class of pus accumulations. Extraperitonæal abscesses of puerperal origin form a distinct class to themselves. By separating cases of pus collections in this way it is possible to discuss the question of their treatment more intelligently.

Incision and drainage by the vaginal route is the best treatment for abscesses of puerperal origin, especially the extraperitonæal variety, because in this way most of these cases will be cured without the sacrifice of the uterine appendages. A large percentage of these abscesses are due to infection, which spreads along the lymphatics instead of along the Fallopian tubes, and in these cases the tubes are slightly, if at all, involved, and when drainage is effected a perfect cure will result in most cases. In some of them an operation to separate an adherent appendage may later be necessary; and, of course, in certain cases it may be necessary to sacrifice one appendage. This class of cases should be treated by vaginal incision; first, becauses it is the safest method of operating, and, second, because it conserves the integrity of the sexual organs. In exceptional cases it may be best to incise puerperal abscesses from the groin, or both from the groin and the vagina; but whenever possible the incision in the groin should be avoided, as the chances of a hernia following are very great.

Incision and drainage by the vaginal route should be employed in the treatment of large complicated cases of pelvic abscess—pus tubes and ovarian abscesses complicated by intraperitonæal abscesses. Women belonging to this class, as a rule, are greatly depressed in strength, and have been sick with septic processes for weeks when they come under observation. Abdominal section, with the removal of the abscess sacs in such cases, has a mortality of about 25 per cent. The mortality from abdominal section in such cases can only be brought down to reasonable limits by merely evacuating the abscesses and draining, leaving a radical cure to a future time, and even this treatment will be followed by fatal peritonitis in many cases. Incision and drainage by the vaginal route in such cases give excellent results. The

mortality in my hands has been nothing, and even in a larger series of cases should not exceed one or two per cent. Some cases, especially suppurating hæmatocele and ovarian abscesses, may be followed by a perfect cure. All of the patients upon whom I have operated in this way have made good recoveries. Some of them are cured, others are so well that they will not submit to operation for adherent appendages, which undoubtedly are present, and still others the operation has enabled to recover from a very serious illness, and has rendered subsequent operation for tubal or ovarian disease much more simple, and practically without danger. In this class of cases a free incision should always be made, so as to secure perfect dependent drainage. If this is done, the incision will heal without sinuses. If the condition of the patients permit, that is, if they are not too prostrated to stand an operation of some duration, it is best to palpate the appendages carefully through the vaginal incision, and to endeavor to lay open freely pus tubes and other small pus accumulations. On the other hand, if the condition of the patients is very grave, one should be satisfied with evacuating the principal abscess sac.

Abscesses in the bottom of Douglas' pouch, whether ovarian or tubal, in young women desirous of embracing every opportunity to retain their fertility, may be treated by vaginal incision and drainage. Subsequently such cases may be treated by freeing the appendages, and by performing conservative operations upon them. I am not entirely sanguine of the results of this method of treatment, but believe it to be comparatively free from danger and well worthy of a trial.

Pelvic abscesses communicating with the bowel or bladder, or by sinuses with the skin, require special study. Each case must be treated on its own merits. When the communication of the bowel or bladder is high up, undoubtedly the abdominal route offers the best prospect for a cure. In other cases it is best to drain through the vagina, in some to perform vaginal hysterectomy, and in still others to combine abdominal operation with vaginal drainage.

Having considered these special classes of cases, we have the remaining ordinary chronic pus tube and ovarian abscess, which constitute by far the largest percentage. All such cases are best treated by abdominal section, and when both appendages are involved by the removal not only of the appendages, but of the uterus as well. It is unnecessary to repeat what has been so often urged in favor of the abdominal route over the vaginal route. The better control which the operator has over the field of operation, the lessened danger of infection, the greater ability to deal with complications of bowel adhesions or

injuries, appendicitis, and similar conditions which so frequently complicate pus collections in the pelvis, are so manifest as to need no arguments. Another advantage is that in such cases with the perfection of modern technique it is possible to close the abdomen without drainage, and when the operation is completed the patient is put in a condition for immediate recovery. Whereas, when the vaginal route is selected, and either clamps or ligatures are employed for the vaginal hysterectomy, the operation is followed by sloughing, and the patient must depend upon gauze drainage to prevent the occurrence of septic peritonitis.

DR. JOHNSON: The question in regard to the mortality Dr. Noble was answering most beautifully when his time expired.

The "amazement" and "astonishment" expressed by several of the speakers that it had ever reached 25 per cent. might be set at rest by the confirming remarks of Dr. Noble.

I said in summing up that the mortality of abdominal operations in badly adherent low-down pus cases was between 15 and 25 per cent. Dr. Noble makes about the same statement. I quoted from the papers of half a dozen other gynæcologists, whom we all know, and whose statements are open to no doubt whatever, that the mortality in these cases is about 25 per cent., and to explain the point raised by Dr. Baldy, as to the class of pus cases referred to; I will reread one sentence in my paper: "The discussion then is centred chiefly upon operations for pus and old blood collections in the pelvis, situated for the most part low down, behind the uterus, and particularly in women who wish to have children."

It was that class of cases to which I drew attention, where adhesions are very great to the omentum and intestines, and everything above the brim of the pelvis, and are so bound together that these "thirty-minute" operations the doctors speak of as so common and successful in their practice cannot be among the class of patients where the mortality in the hands of just as good men is from 15 to 25 per cent. These remarks are not intended to apply to the great experts; they will, of course, have a less mortality than the average operator through the country, who furnished the bulk of the statistics.

It was to the class of cases known as "badly adherent" to which I drew attention, as being much safer to operate from below. If the vaginal operation saves lives, as I claim it does, why not perform it more frequently and save more lives? This operation being almost free from any mortality, it is my own experience as well as that of the surgeon quoted, who operates on these septic patients from be-

low, that they get well permanently, and it is our belief that in the case of very ill and exhausted patients to whom you hardly dare give an anæsthetic; cases one cannot even properly prepare for the operation, if you simply puncture through the vagina, let out from a pint to a quart of horribly offensive pus, irrigate the pus cavity and drain with gauze, these patients will get will. The great majority actually do get well at the time, and afterward, if it is necessary to thoroughly eradicate the pus sac or break up adhesions, which did not absorb, as the patient is stronger and more vigorous, it can be done from above, with much less danger on account of the absolute freedom from pus, and the greatly improved condition of the patient. The questions raised by my friend, Dr. Ashton, as to shock, the personal element and the difficulties of diagnosis are all answered by the statement, that operations in non-adherent or only slightly adherent pus tubes by experts in thirty minutes are not followed by shock or death; but the great majority of operations in the United States are not done by skilled experts. We all know this.

The paper did not refer to these cases. In good hands they nearly all recover.

The medical journals teem with reports from the younger and less experienced practitioners, who detail with great minuteness their attempts to unite ureters they have torn, bladders and bowels they have lacerated. If they had operated from below and simply let out the pus, I claim, they would not have had these accidents, which they detail with so much eloquence.

These cases which Dr. Baldy and Dr. Ashton do so quickly and skillfully, and which always get well, are not the cases I refer to at all. I spoke of the bad cases, low down, behind the uterus, with great adhesions, in very sick women, and which are difficult to get at from above. The point made in regard to the accidents during the operations of Jacobs, Segond, Richelot, and others, are not the operations, either, which I was referring to to-night. They are doing vaginal operations by the hundred, for a great variety of causes. I especially condemned in my paper this indiscriminate removal of the uterus.

If they had done simply nothing except to let out the pus and irrigate their results would have been quite different. This is the important point which I make. As to diagnosis: One must have a gynæcological eye in the end of his finger for pus sacs. We can cultivate this sense of touch. If you let the pus out and do no damage with your finger, patients will recover surprisingly often. I do not think we should be pig-headed either way. The point I want to emphasize is

that none of us should be bound by cast-iron rules in regard to these operations, but honestly and faithfully do what is best for each of our patients, with all the intelligence at our command, after considering all the facts and conditions in each case. We must suit the operation to the case, and not the case to one kind of operation.

Mr. President and Gentlemen—I thank you all most kindly for the compliment of inviting me to read a paper before your Society, for your polite attention, and for the consideration shown in its discussion, and I regret the important subject has not been presented in a manner to convert all my distinguished hearers.

Official Transactions.

FRANK W. TALLEY, *Secretary.*

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, November 19, 1897.

The *President*, HENRY P. NEWMAN, M.D., in the Chair.

Adeno-Carcinoma of the Body of the Uterus and Ovaries.

Dr. JOHN M. BEFFEL: The specimens for demonstration this evening were removed and afterward submitted to me for diagnosis by Dr. F. H. Martin. They are tumors of the body of the uterus and ovaries.

The Uterus is about twice its normal size; its peritonæal surface is perfectly smooth. A longitudinal incision was made opening into the uterine cavity along its entire length. The muscular coat is about half a centimeter in thickness and is of normal appearance. The uterine cavity is, as you can plainly see, entirely filled with a rather solid papillomatous growth. This growth extends from the fundus almost to the internal os, the place at which the uterus was amputated. Microscopic examination of a section, including muscular coat and papilloma, shows the muscle fibers on the peritonæal side normal in size and position, but greatly displaced on the mucous membrane side by an excessive development of the utricular glands. The papillomatous portion is made up of proliferating glands, lined in most places by a single layer of tall columnar epithelium, there being but little con-

nective tissue between the glands. There is one area near the muscularis, however, which is carcinomatous without a doubt. Here the columnar epithelium has proliferated extensively, there being no glandular structure left. The cells are grouped together with no intercellular connective tissue. In the center of this area are cells arranged in concentric masses, the so-called pearls and the cancer bodies described by some authors showing beautifully. Thus we have adenocarcinoma of the body of the uterus.

The Fallopian Tubes are of about normal size. The lumen, however, is about the size of a goose-quill, not showing the normal convoluted mucous membrane. Microscopic examination shows that the epithelium has degenerated and desquamated, thus filling the lumen of the tube with detritus. There is no evidence of tumor in the tubes.

The Ovaries, as you see, are each about the size of a fœtal head at term, the right ovary being slightly the larger. They look not unlike multilocular cystomata. The surface is smooth and shining, resembling a peritonæal covering, in some places being somewhat lobulated. On section the contents of the tumor appear mushy, not filled with fluid, but with what seems to be papillomatous material. Strings or strands of connective tissue run irregularly through the cellular detritus. Microscopic examination of a portion of the tumor removed from near the hilus reveals a glandular structure looking like the utricular glands, only more convoluted and with more interglandular connective tissue. In some places we find the columnar epithelium lining the glands has proliferated into the lumen of the tubes, filling them and then penetrating the basement membrane into the connective tissue thus forming, as you may verify by the slides under the microscope, adeno-carcinoma of the ovaries.

Our diagnosis is primary adenoma of the body of the uterus which became papillomatous, then carcinomatous, with metastatic adenocarcinoma of the ovaries.

Discussion.

The President asked Dr. Martin to say a few words on the specimens.

Dr. Franklin H. Martin: The woman from whom these specimens came was a maiden woman, forty-five years of age. The patient was pale, bloodless, and presented the appearance of a case laboring under some form of slow septic absorption. External inspection of the case demonstrated a tumor, or tumors, filling the whole lower ab-

domen. On entering the abdomen a large cyst presented, which proved to arise from the right ovary and was about four by eight inches in diameter. It was completely buried in omentum and intestines. At two points the mesentery of the small intestines formed a part of the tumor covering, from which it had to be carefully enucleated. Gradually, however, with much difficulty the tumor was finally shelled out.

Deeply imbedded in the pelvis of the opposite side was another cyst, about three by four inches in diameter. It, too, was enucleated and tied off. On severing the tumor of the right side from the horn of the uterus, the tissue through which I was obliged to cut was degenerated, and, as this extended into the uterine tissue proper, I removed the uterus entire. The case is particularly interesting from a pathological point of view, which has been so beautifully elucidated by my assistant, Dr. Beffel.

Uterine Fibromyomata.

Dr. HENRY P. NEWMAN: This is a specimen of fibro-myoma, showing how beautifully these tumors may be removed by myomectomy. I removed this tumor along with the uterus, tubes and ovaries, not believing that this growth, which was deeply embedded between the tube and the ovarian ligament, could be easily enucleated. After removal of the organ, however, it was found that it was the most easy of the three large myomata that were found in the uterus. It grew at the angle of the uterus and was embedded in such a way that it interfered with the lumen of the tube, but did not grow into it, as all fibroids have a distinct capsule, and can be enucleated in almost all instances. The history of the case is as follows:

M. F., aged thirty years, single. Family history and previous personal history good. Menstruation began at thirteen years of age, and was regular until three years ago, although painful the first day. Three years ago patient had eighteen teeth extracted without anæsthesia. There was more or less shock from this proceeding, and the patient had severe hæmorrhage from the gums for three days. From this time she began to be troubled with palpitation of the heart, headache, vomiting after eating and irregularity of the menstrual function. The menses appeared at intervals of two or three weeks, and the nausea was aggravated at these periods.

Digital manipulation caused such violent vomiting that a thorough examination was impossible without an anæsthetic. Abdominal ex-

ploration revealed enlarged ovaries with hæmorrhagic cyst in the right; uterus displaced by two fibromyomata in the anterior wall of the corpus uteri, and a third fibromyoma in the fundus, directly internal and posterior to the origin of the right Fallopian tube, as shown in the specimen.

Dr. MARTIN: I would like to ask the President if he presents these specimens as an argument in favor of enucleation in cases of myomectomy?

THE PRESIDENT: Yes.

Dr. MARTIN: If you were to operate again on the same patient would you do a myomectomy?

THE PRESIDENT: Not on this individual case. There are other reasons that would influence me.

Dr. MARTIN: Supposing there were not other reasons existing, what then?

Dr. NEWMAN: I should remove them by myomectomy, particularly in a young woman with family prospects. This patient was a maiden lady and had suffered severely for many years.

Large Fibroma of the Perinæum.

I have also another specimen to exhibit. The photographs of the case and the microscopical slides are here and will show the character of the growth. It is one of fibroma of the perinæum. In looking at this photograph, at first the tumor might appear to grow from the vulva, the more common seat of fibroids, or, for that matter, of any tumor of the external genitals. This tumor, however, is separate and distinct from the vulva. It grew behind the posterior commissure and really grew from the perinæum, as will be confirmed by the family physician,Dr. Ballard here, who saw the growth in its early development. The history of the case is briefly this:

Mrs. E., aged thirty, American. Good family history. Has never been sick. Married ten years, had five children, the first, second and third being still-born. Fourth child now three years old. Last birth May 14, 1897. Child lived four days. This delivery was instrumental; the others were normal. The cause of death of children could not be ascertained, as no history of specific disease was given by the parents.

Three years ago, at birth of the living child, a tumor the size of an egg was discovered growing from the perinæum. It did not increase much in size until the last pregnancy, when it developed very rapidly,

coming to the proportions of a fœtal head during the nine months. On account of its size and weight, it was a great annoyance, requiring suspension upon the lower abdomen by an improvised support.

She was sent to me one month ago by Dr. Ballard, when examination revealed a large, pedunculated growth, a photograph of which is shown here. It was attached to the perinæum, and folds of skin extended to the rectum and vulva. The structures were much stretched,



Large Fibroma of the Perinæum.

but there were no striæ indicating rupture of true skin, such as is seen in the rapid development of pregnancy.

The womb was retroverted and enlarged from childbirth with inflammation and subinvolution. Cervix and perinæum were torn, and there were present cystocele and rectocele. The growth was removed four weeks ago at the college clinic. Convalescence was uninterrupted and the wound was entirely healed a week ago.

Instrument for removing Silkworm Gut Stitches from Vagina and Cervix.

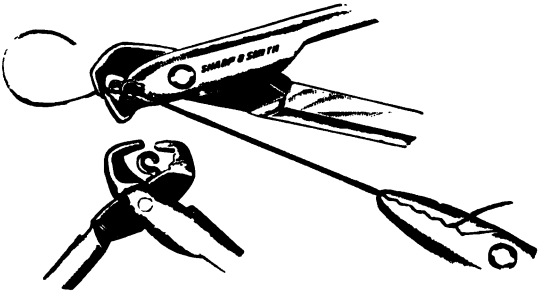
Dr. FRANK T. ANDREWS: Your very kind request that I demonstrate the use of this little instrument, and the still more kindly expression

with which your President has chosen to clothe the invitation have given me great pleasure.

The instrument was devised purely for my own use, but the commercial instinct of the manufacturer has led him to duplicate the instrument many times over. This, together with the approval of those of you who have examined the device, leads me to think that some of



you will find it useful. It is intended for the removal of silk-worm gut stitches from the vagina and cervix. The instrument has the form of a pair of scissors with short blades closing at a very obtuse angle. The blades are abruptly upturned three-sixteenths of an inch from the tips. The cutting edge is practically all in the upturned portion. You will notice a small hook upon one of the blades, about one-third of the distance between the cutting-edge and the pivot. This hook is so



small that when used as a guide and made to slide along the strand of silk-worm gut it stops abruptly upon reaching the knot, thus bringing the blades into position to cut the loop. The bars at right angles to the blades at the tips are for the purpose of closing the space between the blades, thus avoiding the possibility of cutting other stitches than

the one intended. The edge of one blade is serrated to prevent the sliding of both sides of the silk-worm loop into the angle near the tip of the blades and the consequent simultaneous cutting of both sides of the loop.

The blades are made to approach each other at an obtuse angle to insure the cutting of one side of the loop without injuring the other side. As a preliminary to the use of the instrument it is necessary that one or both ends of the silk-worm gut stitch be left long. I am in the habit of cutting off the left hand ends and tying the right hand ends of all the knots in a bunch by a thread. In using the instrument cut the binding thread so that the ends of silk-worm lie loosely at the vulva. Pick up an end of silk-worm gut with a pair of forceps held in the left hand, making gentle steady tension. With the stitch-cutter in the right hand, open the blades widely so that the silk-worm can be placed between the blades and in the guiding-hook. Partially close the blades, so that other stitches will be excluded from between the blades, keeping up slight tension with the left hand, cause the instrument to slide into the vagina on the silk-worm gut. When it has reached the knot, close the blades very slowly, keeping up the tension on the guiding thread. The one arm of the loop will be cut. The other being uninjured, the loop will be instantly drawn out of the tissue by the tension kept up with the left hand. As this instrument is not automatic, a few minutes' practice upon silk-worm knots will add to the certainty of its doing good work when you first use it on a patient. The sensation when the guiding loop comes down properly on the knot is distinct from the impression when the knot catches in the jaws of the blades, as can happen if this instrument is too nearly closed. Steady tension upon the silk-worm throughout is essential.

The Relation between Some Perinæal Lacerations and the Neurasthenic State.

By James H. Etheridge, M.D.

(See page 135.)

Discussion.

Dr. E. C. Dudley: The question is pertinent whether a condition from which the patient recovers in four weeks after the repair of the perinæum would be classed by the neurologist as neurasthenia. I

agree with the essayist in the proposition that laceration of the perinæum may have a causal relation to neurasthenia, but at the same time would speak a word of caution against such a misunderstanding of the essayist's position as would lead to indiscriminate perinæorraphy for the cure of nerve lesions.

Although perhaps not strictly pertinent, the question is at least germane whether the condition usually called perinæal laceration is often laceration of the perinæal body at all. In reality it is, for the most part, injury to the lateral walls of the vulva and vagina. The injury is to the transverse perineii and other muscles which surround the vulva and more especially to the fascial sheaths and connections of these muscles. The usual result of the injury is to let the perinæum down just as the under jaw would be let down if the muscles which hold it up were severed. The question therefore, in the majority of cases, is rather one of displacement than of laceration of the perinæum. If the chapter on laceration of the perinæum in our text-books were headed "Displacements of the Perinæum" that would be nearer the truth. From this point of view the operative treatment of the injury must undergo a radical change. The object would be not to put the large mass of tissue in the place where the perinæum ought to be in order to fill up the gap, but to bring up and replace the displaced perinæal body. In this view no surgeon would say: I always do Emmet's operation, or Tait's operation, or any other one of the multiform stereotyped operations. The absurdity of an operation universally applicable to the repair of the lacerated vaginal outlet would become apparent.

The definite indication, in a given case, should be to perform that operation which will bring the parts together as they were torn. The object generally is to bring the perinæum up into its normal place where it can perform its function of support as a part of the sacral segment of the pelvic floor. This would require accurate, adequate individualization of each case. No two cases would be found just alike; hence, a somewhat different operation would have to be done for each case.

The question is frequently asked: "Doctor, what operation do you do for laceration of the perinæum?" The answer may well take the form of another question. What operation do you do for the lacerated wound of the face?

Dr. ALBERT GOLDSPOHN: I am very much interested in the paper that was presented, and I fully agree with the essayist in regard to the extent of the evil effects of lacerations of the perinæum. It is very desirable to have them thus vividly portrayed. I differ somewhat with him in reference to how these evil effects are produced.

I think it is not directly by the formation of varices, as a derangement of the various plexus that exist in the pelvic floor, not directly by the nervous irritation produced by these as pathological entities in themselves, but the evils occur in consequence of the descensus of the uterus and its adnexa which results from an insufficient pelvic floor. We know that normally the uterus does not lie continually against the perinæum nor upon the recto-vaginal septum. It is only during the exercise of strong intra-abdominal pressure, as by lifting, straining at stool, coughing, etc., that the organs are crowded down to meet the pelvic floor; but at that time they need its support very badly from below, and if the body of the perinæum, as the essayist chooses to call it, is not there, these organs are not arrested in their descent, and they prolapse behind the "dashboard perinæum" and the patient suffers in consequence of a descensus that nobody sees.

Dr. Amos W. Abbott, of Minneapolis: I was very much pleased with the new phase of this subject as presented by Dr. Etheridge. I merely wish to say a few words in reference to a method of making a diagnosis of the condition of the parts. The point is this: We all recognize that the fasciæ of the pelvic floor make a permanent support, as far as possible; that the muscles provide the motion, and that if we could by careful dissection separate the muscles and fasciæ and bring them together individually, as we do in an abdominal wound, we would think we had made an ideal operation. This is practically impossible. We cannot do it. In the great majority of cases we all recognize that we cannot do that dissection. It would be extremely hard to find the various points which we wish to unite, but the muscles are an indication of the situation of the fascia, and if we can make out an exact point of injury of each individual muscle, then we have gone a great ways towards establishing a diagnosis as to whether there is a laceration and its extent. This can be positively done in the manner of which I spoke in a paper presented to the Pan-American Medical Congress in 1893, and that is, by taking advantage of the co-ordination of the muscles of the pelvic floor. If we introduce the finger into the vagina and ask the patient to contract the sphincter ani, not only will it contract, but we have contraction of the coccygeal obturator and pubic portions of the levator, and we have just the same contraction of the compressor urethræ, sphincter vaginæ and transverse perineii. Carrying this out, it is indispensable as an aid to diagnosis. We place the patient in the position described by the doctor in his paper and ask her to contract the sphincter ani. We commence where we choose, so as to go over the region systematically, and we find invariably that the

coccygeal portion is never ruptured; that the obturator portion is never ruptured, except when done by forceps or violence of some kind. When we come to the anterior fibres of the levator, to the sphincter of the vagina, compressor urethræ, and the transverse perineii we find these frequently torn. The right transverse perineii are torn in at least seventy cases out of a hundred, and the several layers of fascia underneath corresponding. This gives us a positive way of making a diagnosis as to the exact condition of the parts connected with the pelvic floor, and more than this, it gives us a definite plan to go by to repair it. In a great many instances we can feel the ends of the muscles as they contract; and, in fact, very frequently we can see them. Repairing the muscles so found brings the fasciæ up into a tolerably good position, as good as we can make it. This explains the position that Dr. Dudley has taken: "That no particular operation meets the indications of every case." Sometimes a little opening in the region of the transverse perineii muscles of one side, making sufficient dissection underneath to expose the muscle ends and bringing them up with a deep suture will suffice, and the operator is surprised to see what a good result he can get from such a slight operation.

Dr. E. C. DUDLEY: I realize the importance of the transverse perineii and other muscles in lacerations of the perinæum, but it is more a matter of injury to the fascia than to the muscles. It is true, as Dr. Abbott has said, that it is quite impossible to bring all the parts together accurately and exactly as they were torn. But for practical purposes one may approximate them so as to get a good result. In passing, I would make a slight criticism on the satisfaction with which many operators view the enormous perinæum sometimes produced by the operation. They say because it is large it is therefore an improvement on Nature. The particular point is, that the question is not one of size but of location. If well up under the pubes, however small, it will support the anterior segment of the pelvic floor, and therefore perform its functions. If displaced toward the tip of the coccyx, however large, it will require an operation on the vaginal outlet to replace it.

Dr. FERNAND HENROTIN: I have heard a good deal this evening about laceration of the perinæum, its physiology, and the repair of it by operation. A good deal has been said also with regard to the ætiology of certain forms of displacements resulting from perinæal laceration, but very little has been said on the paper itself, and that is the relation existing between lacerations of the perinæum and neurasthenic conditions. It seems that most of the speakers overlook that part of the subject, which is after all the main one for discussion. I do not know

that I am competent to discuss the subject under consideration, but I feel that I must support my friend, Dr. Etheridge, in the position he has taken with reference to the relation existing between these two conditions. The first difficulty lies in knowing exactly what neurasthenia is. Many of us talk about neurasthenic conditions, but we are not willing to place our cases upon the broad ground of typical cases of neurasthenia. At present there are so many phases of it, and it is supposed to be the result of so many reflex conditions, that we are very much in the dark regarding it. We know that the oculist cures a great many cases of neurasthenia by correcting some defect in the eye, possibly an error of refraction; the nose man in the same way cures neurasthenia by removing or cauterizing the turbinated bones; the rectal man by stretching the sphincters and removing pathological growths or hæmorrhoids, etc., and the stomach man by washing out the stomach. The subject is still *sub judice*. I desire to strengthen the position of the essayist by saying that it is certainly true that we frequently meet with neurasthenic patients who are afflicted with bad lacerations of the perinæum, and when we have repaired the perinæum the patient gets up very much improved, and frequently entirely cured. How these cases are cured it is difficult to say, for I have also noticed that if such a patient is passed over to a neurologist, is isolated and put to bed, and treated with baths, douches, massage and their usual form of treatment, she often recovers without an operation. Therefore, I have asked myself in relation to these cases whether the condition of good health resulting after an operation is not partially the result of the rest in bed, isolation, etc., and the hypnotic impression upon the patient's mind. That a great many patients do materially improve from the so-called neurasthenia after an operation upon the perinæum, there can be no doubt. And I am obliged to Dr. Etheridge for his bringing about a discussion upon this very interesting subject.

Dr. ETHERIDGE (closing the discussion): With regard to Dr. Dudley's inquiry as to whether four weeks after operation there was such a difference noted, if it were really the neurasthenic condition, I would simply say that the patient had been under the care of a most distinguished neurologist. He suspected there was something wrong about the pelvis and requested me to see the patient. His diagnosis was neurasthenia. I used to be a general practitioner years ago, and dealt with neurasthenic cases, and this patient was pre-eminently a neurasthenic woman.

I want to thank Dr. Abbott for his suggestion concerning the additional means of making a diagnosis in these cases. It is an important

point, but in order to avail one's self of it, it requires a good many examinations and great familiarity with this method to be successful. The general practitioner, who only occasionally makes these examinations, would be in the dark.

Concerning the remarks of Dr. Henrotin, there is nothing to be added to them. I believe there is a strong relation or association between these two conditions. I was in hopes that Dr. Bridge, who is a general medicine man, would say something on this subject. He knows a great deal about neurasthenia, and I trust it is not too late even now to hear from him.

With reference to dilatation of the blood vessels in the vaginal plexus I wish to say that it is not new to me. It is not a new thing. It is well known. When a woman comes to my office who has been treated and treated for neurasthenia, and she is believed to be affected with some gynæcological disorder, I never fail to examine the perinæum carefully, and oftentimes I find it the source of trouble.

Dr. NORMAN BRIDGE (by invitation): I am very glad to hear this discussion, and have no doubt that Professor Etheridge has had the good results which he records, and they are evidently more or less due to operations upon the perinæum. I do not think a very large proportion of cases of neurasthenia are due to laceration of the perinæum; but I do believe that neurasthenia is a lowered vitality of the nervous system, produced by lowering influences of any and all sorts. Many causes conspire to produce neurasthenia in women as in men. Any localized source of irritation is one such cause; numerous localized sources of irritation in a given patient would of course bring on neurasthenia more rapidly and more easily than one would. Women are predisposed or not to this condition, depending upon their resisting power, the vitality of their nervous systems; and the vitality of the nervous system is like the vitality of other systems or organs of the body. Some people have a great deal of resisting power, and others have very little. Some people have such sensitive nervous systems that they cannot endure any localized irritation that causes pain or discomfort, or any reflex disturbances of any sort. These are the patients who are promptly benefited by removing the source of irritation. Cases of neurasthenia are recovering every day by and through influences that remove some localized source of irritation. Very often it is an irritation of the stomach; sometimes it is an irritation of the intestines, particularly catarrh of the large intestine. Again, it may be an irritation of the uterus, or of the eyes. Many, many times it is a disturbance of the moral and social conditions of the patient whereby she

is worried, annoyed, and nagged. Some or many times the condition is due to irritation of the perinæum. It is certainly true in all such cases, that if any localized irritation can be discovered, it should be removed. If there is an error of refraction of the eyes, this should be corrected. If there be a disturbance of the stomach, it should be corrected, if possible. If there is trouble with the intestines, it should be corrected. If the neurasthenic state is due to a laceration of the perinæum or to irritation of the uterus, or both, they should be corrected by surgical measures or by any other means which will be effective. That the lacerated perinæum is responsible for a larger proportion of cases of neurasthenia than other causes, I have not the slightest idea. But every time a laceration of the perinæum is discovered of considerable degree, in a neurasthenic patient and another cause for the nervous condition cannot be easily discovered, the perinæum should be investigated as the probable source of the trouble, which will probably be corrected by operation. As to the results of such operations, what Dr. Henrotin has said is pregnant with wisdom.

A New Operation for Ventrofixation of the Uterus, with Presentation of Cases.

By Franklin H. Martin, M.D.

(See page 150.)

The Alqui-Alexander-Adams Operation, with Important Adjuncts.

By Albert Goldspohn, M.D.

(See page 155.)

Discussion.

Dr. Fernand Henrotin: I wish to say, judging from the description given by Dr. Martin of his new operation for ventrofixation of the uterus, that I do not exactly favor it, and that I do not believe it will be generally adopted. Ventrofixation, in my opinion, has seen its day, as far as being applicable to restoring the normal position of the uterus in women during the child-bearing period. After this time it is usually the simplest and best method of obtaining the object desired; that is to restore the normal anteflexion. A simple stitch is sufficient to hold the uterus forward, and is all that is necessary, and we very seldom have any trouble afterward. Let it be remembered that ventro-

fixation is only available for the purpose of holding the uterus anteflexed, and not intended for an operation to hold up a prolapsed uterus. Therefore, a single stitch is entirely sufficient, and that stitch should always be placed a little posterior to the middle line of the fundus of the uterus. It seems to me that it is unsurgical to increase the traumatism in any operation, and I believe by punching a hole through the top of the fundus of the uterus and stripping of the peritonæum trauma is increased. I also believe that the introduction of a strip of peritonæum between the layers of the external wound may increase the liability to hernia. When applied only to women having passed the child-bearing period, the adhesion brought about by placing a stitch through the fundus, as described, will in a very short time allow of all the motion necessary for healthy physiological function. For women who are still liable to become pregnant, at the present time I favor Dr. Mann's method of shortening the round ligament intra-abdominally; and in a few cases, but very few, the shortening of the round ligament by the Alexander method. I must take more or less issue with Dr. Goldspohn regarding the future of Alexander's operation.

I believe that in by far a large majority of cases of retroflexed uterus that cannot be cured by careful massage and reposition with pessary, the patient will be found affected with more or less disease of the ovaries, or tubes, or both; and these cases demand an abdominal incision, if they belong to the variety which may be called aseptic and conservative. A certain proportion of septic cases are best treated by vaginal incision. If the abdomen is only opened in the median line, I would hold up the uterus with a stitch, in old women, or shorten the round ligament, intra-abdominally, in young women, but would never think of increasing the number of incisions by opening the inguinal canals. Many women with pelvic symptoms that have proven incurable by non-surgical treatment, have diseased tubes and ovaries which cannot be recognized by bimanual palpation. They have small, painful ovaries, tubes entirely occluded by spider-web adhesion, and formations like thin veils enveloping the ends of the tubes, and closely adherent to the neighboring organs. Such women, of course, cannot be cured by any operation which does not involve opening of the abdominal cavity. A simple incision in aseptic cases carries with it no more danger than Alexander's operation. Therefore, I believe that the proper field for the latter is very limited. I do not think it is good surgery to open the inguinal canals, dilate the internal ring and operate through this restricted opening, for reasons that seem to me so obvious as not to require argument.

Dr. E. C. DUDLEY: The evolution of hysterorrhaphy is interesting. In the earlier operations, the uterus was first stitched very lightly to the anterior abdominal wall. The result was that it did not stay there. The adhesions gave way, the organ swung out of place, and the operation was a failure. The next method was to scarify or scrape the anterior uterine and parietal peritonæum which were to be united and thereby to make broad, strong adhesions. The result was the uterus became immobilized and fixed in the adherent position. There is a normal range of movement for the uterus. It has no absolutely-fixed normal position. Fixation is pathological. Anything which immobilizes the uterus is essentially a displacement, and it may be a most serious displacement. The chief difficulty was from dystocia when these women with strongly-fixed uteri became pregnant. The next step in evolution was made by Howard Kelly. He lightly stitched the posterior wall of the corpus at a point just back of the fundus to the anterior abdominal wall. Adhesions thus formed do not permanently fix the uterus. They pull out and form a new artificial ligament. This ligament adequately supplements the natural ligaments. In this way the uterus is brought into normal anteversion and anteflexion. When the organ is stitched to the abdominal wall in this way, the intra-abdominal forces, including the forces of straining at stool, will be directed against the posterior wall of the uterus, and will tend to keep it in place. A uterus thus stitched to the anterior abdominal wall, does not go back into retroflexion, and if lightly fixed does not cause dystocia. I see no advantage in sewing the uterus to the anterior abdominal wall by a living ligament of the kind used by Dr. Martin. Such a ligament would probably soon atrophy and then the result if good would be due to the incidental adhesions. The adhesions produced by catgut are perfectly reliable and permanent, hence the living ligament is no better.

Alexander's operation will not become universal. It is indicated in cases where the uterus is perfectly mobile, and where there are no complications, such as inflammation and tumors. When these complications exist, the Alexander operation, unless you open through the vagina, and treat those conditions before doing it, is out of the question. Moreover, most of the cases in which there are no such complications are amenable to treatment by conservative means, such as pessaries and tampons. The number of cases amenable to treatment by the Alexander operation is, therefore, small and the range of the operation is limited.

The very contra-indications of Alexander's operation become the

indications for hysterorrhaphy. The cases which present contra-indication to Alexander's operation are numerous, consequently some kind of suspension of the uterus, either by a ventrofixation, as ordinarily understood, and as I have described, or shortening of the round ligaments through the abdominal or vaginal wound, must have a wide field.

I have admired the enterprise of many who, in writing and speaking upon this subject, are able to draw distinct lines of demarkation between the precise indications for these multiform operations. It is refreshing to be absolutely certain. However, the value of a statement is often in inverse proportion to its positiveness. We are just beginning to get the secondary results of these operations, and they are far from satisfactory. The time for dogmatizing on this subject has not yet arrived, and the cocksure centuries have passed.

Dr. Amos W. Abbott: I do not feel very much like discussing Dr. Martin's paper because I have not had as great an experience with ventrofixation. I would like to have the Doctor answer, when he makes his closing remarks, the question as to whether he does not think that the final suturing with catgut and the manipulations that he makes during the process, especially where there have been adhesions, whether the suturing of the uterus alone to the abdominal wall would not accomplish about the same thing as with the addition of his special method. I ask this question for information. I feel a little more at home when I come to speak of Alexander's operation, and I think that the rule applies here as it does to a great many other things, namely, the things we are accustomed to do we are apt to like, and the things we do not do we are apt not to see the good in, and we sometimes think we see some bad things that do not exist. But I wish to say that I agree entirely with the position taken by Dr. Goldspohn, with the exception of that part of the operation in which he speaks of opening the internal ring for the breaking up of adhesions and removal of the ovaries, etc. That can be done much better by a post-vaginal section, and this is a most important point in connection with Alexander's operation. When there are no tumors pulling the uterus back, no adhesions, Alexander's operation is one that will have a permanent place. I must say, after some considerable experience with it, that I am perfectly satisfied with the operation under these conditions. Regarding retrodisplacements complicated by adhesions, I am really astonished to see that my good friend, Dr. Henrotin, has forgotten his own child. We have all learned from his teaching how to open the posterior vaginal wall to break up the adhesions, to resect the ovaries,

open the tubes, and put the woman in a first-class condition for the Alexander operation. We must go by our results. If our results are good, and theory is against them, there must be something wrong with the theory. I have probably done this operation, *i. e.*, post-vaginal section with Alexander's operation, in fifty cases, and I must say the results have been very satisfactory.

There are one or two minor points that I would like to speak of, and one is with reference to suppuration after these wounds. Formerly I occasionally got suppuration, but it was in those cases in which I made through and through sutures through the skin. Now I insert them from within outward, and I have not had in the last sixty cases to my knowledge a suspicion of pus. On account of the size and condition of the hair follicles, are we not more apt to carry germs from the outside than in operations higher up on the abdominal wall?

In reference to the length of time that the patient should be kept in bed. When the patient is in the erect position she is in the most favorable posture for retention of the uterus in its normal position, and while it has been my custom formerly to keep these women in bed three weeks after operation, I now let them sit up when all soreness is over and the results are just as good.

Dr. T. J. WATKINS: Of all the abdominal operations devised for the relief of retroposition of the uterus I prefer ventral suspension. The operation which I employ is to attach the serous surface of the uterus to the peritonæum lateral to the wound on either side by means of a fine silk suture. The suture includes the utero-ovarian ligament, so as to avoid deep suture of the uterus, hæmorrhage and cutting of the suture. The suture includes only the peritonæum of the abdominal wall. One suture is used on either side. The slight amount of traumatism produced is certain not to produce extensive adhesions, and, by including only a small portion of the peritonæum of the abdominal wall guards against dystocia in the event of pregnancy. I have for some time substituted vaginal fixation for abdominal section in the treatment of retropositions of the uterus. The operation I do is a modification of Wertheim's and Byford's vaginal fixation of the round ligaments. The operation consists in separation of the vagina, as in vaginal hysterectomy; separation of bladder from uterus and opening into peritonæal cavity, anterior and posterior to uterus; treatment of uterine appendages and separation of adhesions if needed. A silkworm-gut suture is now passed through the left edge of the vaginal wound, through uterus and left round ligament at their junction, through right round ligament in like manner and finally through right edge of the vaginal

wound. Two, three or four sutures, as required, placed at right angles to the long axis of the vagina close the wound anterior to the cervix. These sutures may or may not pass through the uterine wall. One or two sutures fasten the posterior vaginal wall to the cervix. If the uterus is much prolapsed the posterior vaginal wall is incised longitudinally, so as to allow the cervix to be pushed further upward and backward by the sutures placed anterior to the cervix. In the opening made posterior to the uterus adhesions form which help hold the cervix upward and backward. The operation not only connects the backward displacement but it also cures the prolapse which of necessity always antedates the backward displacement. Dystocia will probably not occur because no sutures are buried and but a small portion of the uterine wall is involved in the fixation.

Dr. HENRY NEWMAN: Owing to the lateness of the hour and the subject being presented in such an able manner, I shall speak only of one or two points in regard to the methods employed by Dr. Goldspohn in shortening the round ligaments. It is well known to the members of the Society that I presented this topic some ten years ago, at which time I stood very nearly alone in the advocacy of the operation. Within this period the profession has come to recognize that it is a valuable operation within the limits of its applicability and one that has come to stay. Some time later Dr. Abbot, of Minneapolis, reported his experience with the operation to this Society, and I am glad to see that he is still an advocate of this procedure. I wish here to refer to a point that has brought me into controversy with Dr. Edebohls, of New York, who claimed, but has since conceded the priority of the modification which I brought forward ten years ago and which has stood the test of time. The essential feature of this modification is in operating at the internal ring instead of at the external ring, as was done by Alexander and those who follow his original technique. The advantages claimed are these:

1. Greater ease and certainty of finding the ligaments which are here, strong, well-defined structures, while at the external ring the component fibres are frayed out in distribution to their several attachments.

2. We seize the ligament in the canal of Nuck as it enters the abdomen, and aided by the sense of sight can be assured that we are drawing directly outward upon the abdominal portion instead of stretching its inguinal portion in bringing the uterus forward.

3. The force used in pulling out the ligament is brought to bear upon its strongest part, and is in a direct line with its abdominal course.

This is in strong contrast to the old mode of pulling upon its frayed terminal fibres at nearly a right angle with its course and over the sharp resisting surfaces of the ring.

4. We can obviate the tendency to hernia best at this point, using deep sutures for constricting the canal, at the internal ring, insuring firm union where most needed.

As there is no teasing or bruising of tissues by this simpler method, there should be no complication in recovery. I use catgut or kangaroo tendon, sealing the wound hermetically with iodoform collodion. Those distressing sensations of painful tension which follow severing of the intercolumnar and converging muscular fibres about the external ring are never complained of, and the patient has a very comfortable and rapid convalescence.

I have yet to recall a single case where hernia has resulted, or a return of the displacement, when the operation was properly done after this method.

Dr. GOLDSPOHN (closing the discussion): I have very little to refute because very little argument has been adduced against the Alexander operation. When an enemy becomes cornered he generally shows animus, and the animus displayed by the opponents of the Alexander operation is pretty good evidence in itself that they are on their last legs. In the first place, the history of the operation is that it is now up for the third time. The only reason the operation did not prosper was because general surgeons did not find the ligaments readily enough, and that is the principal reason why most men did not adopt it. The round ligament will be the thing to deal with because no more feasible and natural structure can be found. And since the evils of the surgical monstrosities in the abdomen are coming to light, men are beginning to think and to flock to the round ligament. They choose the Alexander operation, rather than the intra-abdominal methods, either per vaginam or otherwise, because it gives decidedly the better results for obvious reasons.

Reference was made to the dangers of pelvic massage. The first requirement for the gynæcological masseur is that he be a good diagnostician by bimanual palpation, and those who do not get good results by pelvic massage are not such good diagnosticians.

As to any reasons for saying that no complicated or adherent retroversions can be handled in this manner; that we must open the abdomen by a median ventral incision and thus do an additional operation on the woman, they are futile.

I did not say that I break up the adhesions with the sound. Dr.

Henrotin must have misunderstood me. The sound, in those cases where it is needed at all, merely steadies the uterus; and with the index finger introduced through the dilated internal inguinal ring, I sever the adhesions and free the uterus just as intelligently as any one does through a median ventral incision of smaller size. The reason for the desirability of selecting this route is that it furnishes the most serviceable method for dealing with the round ligaments, and I do away with another abdominal section also. When it is considered that I will do a curettement, then a Schroeder cervix operation, then shorten each round ligament, after freeing the uterus in this manner, and possibly resecting or suspending one or both ovaries and finally do a posterior colporrhaphy and perinæorrhaphy also, it must be remembered that I could not do all these things and perform a median ventral cœliotomy, in addition. Therefore, the reasons for ruling out complicated cases of retroversion from treatment by this route totally fall, as is also affirmed by Dr. Edebohls. And certainly my results are so good and give me such satisfaction that all that has been advanced in opposition to the method does not influence me in the least.

As far as Dr. Newman's method of finding the round ligaments is concerned, it is still favored by a good many operators. I also adopted it up to about three years ago, but I had considerable difficulty in finding the ligaments, and frequently lacerated the internal oblique and transversalis muscles excessively in the effort, which I now avoid quite uniformly.

Dr. MARTIN (closing the discussion): Not one argument has been brought forward against my operation that in any way will make me hesitate to perform it in the future. The principal objection to it seems to be the fact that it is something new. In discussing this subject as a whole, the question was raised by one of the first speakers as to whether symptoms are produced by retroversion of the uterus. I think it is unnecessary for me to speak on this phase of the subject. I think most of the members will agree with me that there is nothing we meet with in gynæcology that produces more suffering than retroversion of the uterus with its complications. So that if we can devise means for correcting the retroversion we should do so.

In regard to the Alexander operation *versus* my operation, I will say that at almost every clinic I conduct I perform an equal number of Alexander operations and ventral fixation operations. I believe equally in both operations when indicated.

In regard to the operation I have presented, I have no hesitation in saying that it is superior to any other method simply because it does

away with all forms of sutures. Not even fixation with catgut is necessary. Therefore, there is nothing left in the abdominal cavity of the woman when I get through which can irritate or suppurate. There is nothing there but a living ligament, and this ligament produces thorough fixation, as has been demonstrated by two years' experience.

I have been slightly misunderstood, for the reason that in drawing my pictures on the blackboard I did not give the proper pitch to the uterus. I am not an artist. If you will remember, in the paper I stated that the Cleveland needle was passed through behind the crest of the fundus of the uterus. This naturally throws the uterus into extreme anteversion, so extreme that the intra-abdominal pressure must impinge posterior to the crest and thereby keep the uterus in position. Catgut, in a too large percentage of cases, will not fix the uterus so that it will remain permanently. If you will denude the surface of the uterus until it is completely denuded, and denude the peritonæum of a large part of its epithelium, stitch it together with catgut, with enough stimulation and time you will almost invariably find it destroyed. We know we can stimulate the absorption of adhesions everywhere in the pelvis by massage, electricity, and hot water. We do it every day. This is the reason Fowler adopted this operation; because he had proved, in case after case, that where there was not an actual ligature which would hold, silk, silkworm-gut, or silver, fixation in any form would in time disappear. This operation of mine, however, fixes the uterus by broad fixation and in a manner to preserve great mobility afterwards. The uterus can be retroverted completely, and you can feel that the tissues have gone with the uterus, and when you remove the hand it will immediately readjust itself; so that this fixation allows of the largest range of mobility. The operation does not take more than a minute longer than to do an ordinary laparotomy.

Dr. ETHERIDGE: What do you mean by two minutes? Please define it.

Dr. MARTIN: I mean the extra time it requires to fix the ligament.

Dr. DUDLEY: The remark made by Dr. Martin relative to catgut is contrary to the experience of a very large number of operators who have used it in this operation, and they have found the organ in perfectly mobile equilibrium a long time afterwards.

Dr. MARTIN: I have done ventrofixation in a large number of cases with catgut and a definite per cent. of those cases failed. Occasionally one will not fail. If, however, there is a small percentage of failures with catgut, and there is, that is sufficient reason why we should abandon it, because we have a method which will not fail.

Dr. DUDLEY: I use fine formaldehized catgut, or chromic catgut, and I do not stitch broad surfaces, and I do not scarify, and my results are good. I know this is the case because I have examined patients months afterward and have found the uterus in mobile equilibrium and in its normal position. Why there should be this discrepancy I shall not attempt to explain.

Dr. MARTIN: I will admit that the uterus will stay in a certain percentage of cases, when fixed with catgut, but I know from experience that it will not stay in all of them. For that reason I have abandoned its use, and I find I am not alone in this experience, and in the opinion I have advanced in regard to the unreliability of catgut.

Official Transactions.

C. S. BACON, *Editor of Society.*

SOCIETY PROCEEDINGS IN BRIEF.

Transactions of German Naturalists and Physicians at Brunswick: Section on Obtetrics and Gynæcology. First Session, Sept. 20, 1897.

W. A. FREUND: *Complicated Urinary Fistulæ.*

Case I. was that of a woman twenty-three years of age, who in her ninth year fell upon the point of a fence rail, which penetrated her genitals and entered her distended bladder. Since then, incontinence of urine. She presented a fistula running through the vesico-vaginal cellular tissue and terminating at both ends in the vagina. More posteriorly there opened another fistulous tract, which, running a tortuous course, terminated anteriorly in the bladder. Operation resulted in a cure.

Case II.—A woman aged twenty-nine years suffered from incontinence of urine and copious leucorrhœa, since last birth, a brow presentation, terminated by cranioclasis. Presented vesico-vaginal fistula anteriorly and behind this a markedly tortuous fistulous tract starting from the anterior vaginal wall and leading to a pus sac behind the rectum. The urinary fistula was easily closed. The other was opened by incision behind the rectum, drained and brought to a cure. The interest in these cases rests mainly in their mode of production. In the first, the rail passed through the bulging anterior vaginal wall, re-entered the vagina again, penetrated its walls and found its way into the distended bladder. The continued retraction of this organ, owing to its failure to refill, produced the peculiar direction of the fistula and its winding course. In the second case the injury was caused by forcible attempts at turning the impacted head and the pressure gangrene which followed.

Discussion: VEIT asked if drainage of the bladder would not have been sufficient to heal the first case?

W. A. FREUND: *On Resorption.*

Decided indications alone justify excision of diseased uterine appendages. In acute stages antiphlogistic measures should be applied in suppuration—incision and drainage, or excision of the offending organ, as the case may be; in the intermediary stage of chronic infiltration or exudation, measures for the production of resorption. Among the latter are iodine, ichthyol, tampons, ol. morrhuæ, douches, massage and, above all, pressure in the vaginal fornices and upon the hypogastrium by means of bags of bird-shot employed for hours at a time.

Discussion: EBERHART called attention to the fact that the last-named measure is also recommended by Auvard in his text-book.

W. THORN: *Statistics and Clinical Notes on Carcinoma Uteri.*

Though the mortality for total, vaginal hysterectomy for carcinoma is reduced to a minimum (1-5 per cent.), the ultimate result is unsatisfactory, as at the end of five years hardly 30 per cent. of operated cases escape a relapse. Excision is better than igni-extirpation, for the latter must, with few exceptions, be reinforced with ligatures and often causes serious injury to neighboring structures. Out of sixty-two total extirpations one died as the result of the

operation. Only five recurred within the first six months, while most cases relapsed within two years. Seventeen cases were considered cured after a lapse of six years. Improvements in the results can only be effected by a general recognition of the fact that early diagnosis and intervention are all-important.

FEHLING: *Pregnancy and Delivery with Carcinoma of the Cervix.*

If the carcinoma is operable, it should be treated without any consideration for the fœtus; if, however, it cannot be radically removed, the interests of the fœtus step to the foreground. By a proper combination of surgical and obstetrical principles these cases can be much more satisfactorily treated than formerly. If the uterus is too large to be removed per vaginam the membranes should be punctured or a median incision made in the uterus, and upon the consequent diminution of size, vaginal hysterectomy should be performed. Should the child be viable and too large to pass through the stenosed cervix without causing considerable damage, Porro's modification of the sectio Cæsarea, finds its indication to be followed, in suitable cases, by vaginal extirpation of the remaining cervix. Should the complication be first discovered during labor, the last-mentioned procedure should be adopted if the case is operable; if not, free incision of the cervix, followed by forceps, is recommended. Version is apt to cause rupture of the uterus.

Discussion of the Last Two Cases: VON HERFF: There is no proof of the inoculability of cancer virus if that exists at all. There may be grafting of carcinomatous particles, but that seldom occurs. Most recurrences are due to incomplete removal of the primary tumor, to a subsequent independent growth.

KUGELMAN cited a case in which he had employed palliative cauterization three times and yet the patient was in tolerably good health despite extensive adhesions of the cervix to the bladder.

VEIT: The inoculability of carcinoma in the line of incision should be conclusively proven if the surgeon himself became a subject of infection after an injury or abrasion received in the performance of the operation.

SAENGER: As ætiological factors in the production of recurrence, inoculation and implantation do play as great a rôle as does incomplete removal of the peripheral infiltration. Clamps are better than ligatures, as they allow of more lateral application and do not show any tendency to slip inward.

THORN, in conclusion, says that he does not deny that carcinomatous infection exists, and that transplantation is possible. If the incision does not exist further than one centimeter beyond the limits of the tumor, a recurrence may be expected.—Abstracted from the *Centr. f. Gyn.*, October 9, 1897.

Transactions of the German Naturalists and Physicians at Brunswick: Section on Pædiatrics, September 20, 1897.

1. HESSE. *A Substitute for Breast-milk.*

HESSE, who for ten years has busied himself with the question of the artificial feeding of infants, follows the precepts of J. Lehman, which consists chiefly in the conversion of cow's milk into a compound resembling breast-milk by the addition of water, egg-albumen and lactose. According to Lehman the addition of 2.9 per cent. of fluid egg-albumen and 4.2 per cent. of sugar of milk to two parts of cream containing 9.5 per cent. of fats and three parts of water will produce a mixture that is almost a chemical counterpart of breast-milk.

Lehman's Table.—Cow's milk, normal: casein, 3.0; albumen, 0.3; fats, 9.5; lactose, 4.5; salts, 0.7; water, 8.20. Cow's Milk, diluted: casein, 1.2; albumen, 0.12; fats, 3.8; lactose, 1.8; salts, 0.3; water, 92.8. Additions, albumen, 0.38; lactose, 4.2. Breast-milk: casein 1.2; albumen, 0.5; fats, 3.8; lactose, 6.0; salts 0.3; water, 88.2.

Hesse modifies this procedure in that he rubs up the lactose with the fluid egg-albumen in the given proportions, so as to make a paste which is rapidly dried and then grated into powder form. Thus 50 c.c. of the diluted cream requires 2.3 gm. of the powder. Hesse, finding that the diluted cream is rather poor in salts, especially of iron, he adds this in the form of ferrum lactosaccharitum, in the proportion of 5 gm. per 1,000 gm. of the powder.

In general the infants bore the preparation well and thrived thereon, though two cases of Barlow's disease (infantile scurvy) occurred under its administration. He gives the following résumé of his observations:

1. It was possible to feed infants with this mixture from the moment of their birth to the end of their first year without any digestive disturbances and with the attainment of a body-weight equal to that of a breast-fed child.

2. A number of the older children suffering from dyspepsia were immediately cured by the ingestion of this food, and commenced to gain in flesh and strength.

3. Sickly infants, suffering from incurable diseases, were kept alive for many months through this nourishment.

4. Prematurely born or abnormally light children (twins) at once began to thrive upon the mixture.

Discussion: HEUBNER warns against the reliance put in the conclusions of the chemists, and says that the clinical results should be the only criteria in determining the value of any proposed substitute for breast-milk. He is not convinced that Hesse's mixture is at all superior to simply diluted cow's milk as an infant food, especially as two cases of Barlow's disease had occurred under its use.

SCHLOSSMANN says that if the chemistry of breast-milk is not studied we cannot hope to produce a rational substitute therefor. He has used Hesse's preparation and prizes it highly.

SOLTMANN agrees with Heubner and says that further attempts to convert cow's milk into a perfect equivalent for breast-milk upon a chemical basis will probably be futile. He thinks, however, that Hesse's mixture ought to be good in certain cases.

HESSE, in conclusion, maintains that in the adoption of the above-outlined method, a rational means for the improvement of the general well-being of the bottle-fed infant will have been gained. He doubts that better results have ever been obtained by the use of any other substitute for breast-milk.

2. O. HEUBNER. *Upon the Metabolism of a Nursing Infant.*

HEUBNER made a series of experiments with an infant aged ten weeks, which enabled him to bring forward a comparison of the elements of the ingesta that were assimilated and the elements of the excreta. He was aided in his investigations by Rubner, who undertook to determine the losses by respiration. He regards the results as not strictly physiological, as during the time employed in making the experiments the child's weight had remained stationary, while

it should have increased. This he ascribes to the fact that the child's mother (aged 25), who nursed it during the investigations, produced on an average but 613 gm. of milk per day, which is decidedly too little for a child weighing 5 kilograms, the proper amount for which should be about 750 gm. Besides, her milk proved to be rather poor in fats.

To determine the losses in gases and moisture, the child was placed in a glass case devised by Rubner, and connected with an apparatus for respiration. The urine and fæces were collected separately by means of the special apparatus described by Bendix (*Jahrbuch f. Kinderheilkunde*). The experiments with the urine and fæces covered a period of nine days, while those with the losses by respiration were carried on for six.

It was found that no inconsiderable part of the nitrogen was retained, the albuminous principles being thus increased. In carbon, however, there was a deficit, more being excreted than was ingested. The relative loss of weight of the infant was therefore due to loss of fats. As regards water, 530 c.c. were ingested daily, of which 311.5 c.c. (59 per cent.) passed off in the urine, and 191 c.c. (36 per cent.) in perspiration. He calls attention to the interesting fact that while the child was awake 45 per cent. more water was lost by evaporation than during sleep.

It can thus be seen that the organism of the growing nursling (similar to that of the convalescent), makes every effort to appropriate albumen, even at the expense of its own fatty constituents. According to the calculations of Rubner the assimilable principles of the breast-milk used in this case amounted to 614 calorics per litre. The child thus received 360 calorics per day, or about 70 to each kilogram of weight, an amount inadequate for the requirements of a child of ten weeks. Though the child was underfed, life was nevertheless supported, and it did not lose in weight. Thus the author draws the interesting conclusion that 70 calorics per kilogram in weight seem to be the lowest limit of nourishment required for the existence of an infant.—Abstracted from the *Wiener Klin. Wochenschr.*, October 21, 1897.

Transactions of the Obstetrical and Gynæcological Society of Paris, November 11, 1897.

M. PICHEVIN.—*False Cyst of the Broad Ligament.*

The case was that of a multipara, about thirty-five years of age, menstruating regularly and the subject of attacks of pain in the lower portion of the abdomen. Upon examination the uterus was found to be normal, but anteverted and pushed to the left. On the right side was found a smooth, rounded tumor, about the size of two fists. It was very fluctuating, fastened to the uterus, but presented no pedicle leading to that organ. Pressure produced some pain.

As to diagnosis:—was it a hydro-salpinx? The volume of the tumor, its rounded form, its low situation, the absence of a pedicle, the unilateral distribution of the lesions led to the belief that the case was one of a small ovarian cyst or cyst of the broad ligament. But an ovarian cyst of that volume ought to be more movable, to have the pedicle and not be fastened to the uterus; hence the diagnosis of intraligamentous cyst.

A laparotomy was performed. Above and in front of the cyst was a smooth and rather tough membrane, which did not form part of its wall. It was the double fold of the broad ligament which covered the tumor. This, situated behind the posterior fold, was surrounded by a zone of rather loose adhesions.

Upon releasing the latter, it was found that the tumor was a tubo-ovarian cyst.

If the topography of these cysts be not recognized, one might hasten to open the broad ligament from above and thus create an artificial dissection, which has at least the disadvantage of prolonging the operation. What ought to be done is to attack the tumor from behind, releasing the adhesions from above downward, and then detaching the cyst from the broad ligament from below upward.

M. PICHEVIN.—*Two Hysterectomies for Uterine Fibroids.*

The treatment of uterine fibroids is still the subject of very active discussion. Certain physicians, including even surgeons, adhere to expectant or purely medical treatment, claiming that most cases undergo a retrogressive metamorphosis after the menopause. Other surgeons, on the contrary, maintain that abdominal hysterectomy is indicated in every case in which the diagnosis of uterine fibroid is made, as the oblation of a small fibroid is a tolerably safe procedure, while if the tumor is allowed to increase in size, operative intervention becomes more dangerous. Besides, they call attention to the frequent malignant degeneration of fibroids and the dangers that the tumors add to pregnancy.

We think that it is not necessary to operate every case of fibroid tumor, but insist upon its careful surveillance, especially those cases that give rise to no symptoms, and are usually discovered by chance. If they cause no hæmorrhage, no pains, no symptoms of compression, conservative treatment is in place. Should they rapidly increase in size or cause urgent symptoms the question of intervention presents itself. Curettage or intra-uterine electro-therapy may temporarily control the hæmorrhages, but if symptoms of compression be superadded, or if malignant degeneration be suspected, the radical operation must be performed. It may be added that the field for the vaginal operation is becoming much greater since the safety of this method has become more generally appreciated.

The following two cases point out certain indications for hysterectomy:

Case I. was that of a woman forty-two years of age. She menstruated regularly since her thirteenth year; had had eleven children and two miscarriages. In June, 1897, she suffered a loss of blood, which lasted six weeks. Upon seeing her in July I was struck with her emaciation and her pale, almost jaundiced color, which were more marked than one would expect from the duration and intensity of the flow. I performed an exploratory currettage, but nothing suspicious was found in the scrapings. The operation gave her but a few weeks' respite, and she returned in October, having bled for a month and a half. The uterus was about the size of a fist, smooth, and the cervix healthy. I performed a vaginal hysterectomy, found the uterus to be fibromatous, and in the fundus discovered a small, suspicious-looking zone, which has not as yet been microscopically examined.

Case II. was that of a woman forty-one years of age, who was operated upon by M. Le Dentu. This woman, who had had profuse menorrhagias since her twentieth year, has been obliged for the last two or three years to remain abed during the menstrual epochs. These hæmorrhages were accompanied by violent spasmodic pains in the lumbar and iliac regions, and besides she suffered from continued pain in the hypogastric and sacral regions.

The uterus was larger than two fists, smooth in contour, except at a point just above the isthmus, where there was a small rounded projection. The cavity and the cervix was filled with numerous small polypoid growths, which were found to be free from epitheliomatous elements. The profuse hæmorrhage and the pain seemed to justify a hysterectomy, which was accordingly performed by the vaginal route, the uterus being removed by morcellement. It was altogether fibromatous, and its cavity was distended with numerous small. firm polypi.

Discussion.—M. FOURNET: Intervention is indicated in every case of fibroma. That does not imply that the uterus must invariably be removed. But it is good practice to ablate a submucous pedunculated fibroma, the same as one can and should remove a pedunculated subperitonæal fibroma. It is certain that to allow such a tumor to remain involves more danger than its removal. Every fibroma ought to be carefully watched, and if there is rapid augmentation in size, the indication for operation is present.

M. DOLÉRIS: I believe that few physicians hesitate in demanding operative interference when they diagnosticate certain fibroids in their patients. On the other hand, surgeons and gynæcologists have perhaps too marked a tendency to charge fibroids with malignant degeneration, though I have already seen several cases; but it is admitted that a large fibroma in a young woman ought to be operated upon, while a small fibroma in a woman approaching the menopause should simply be kept under observation.—Abstracted from *La Semaine Gynécologique*, November 16, 1897.

GYNÆCOLOGY.

FRANCE.

Intermenstrual Congestive Attacks.

G. BOUILLY (*La Semaine Gyn.*, November 16, 1897), says that in the affections of the uterus and appendages the influence of menstruation upon the pain is irregular and but little understood, but adds that in general in affections of the uterus, and particularly affections of the parenchyma, the pains are aggravated by the return of the catamenial flow, or are appreciable only at that time.

The question is a little more obscure in lesions of the adnexa; in cystic diseases of the ovary whether they be of the simple or proliferating type the pain during menstruation is practically nil; on the other hand it is often very intense in small micro-cystic ovaries. In infectious lesions, salpingo-oöphoritis, catarrhal, interstitial or suppurating, menstruating in most cases augments the pain of the pre-existing affection; sometimes the first painful manifestation of ovarian or tubal disease sets in at the menstrual epoch. As a reciprocal to this phenomenon, an acute inflammatory attack of the adnexa seldom occurs, even between the menstrual epochs, without the appearance of a sanguineous discharge. In some cases, however, and without evident reason, the return of the flow diminishes the severity of the pain which may constantly accompany lesions of the adnexa.

But he calls particular attention to certain cases in which the menstruation itself follows a perfectly normal course; but ten or twelve days after the cessation of the flow, the patient becomes subject to a more or less violent pain in one or the other side of the abdomen, sometimes accompanied by the appearance of a leucorrhœa or an exaggeration if it already exists, or of a pinkish or purely sanguineous flow and sometimes even a veritable hydrorrhœa. These phenomena, pain and discharge, usually co-exist; sometimes the pain alone sets in, but the discharge rarely exists without the pain.

The symptoms are then discussed in detail.

The pain is usually the first symptom, and may be the only manifestation of this slight intermenstrual crisis. It is usually unilateral and without any particular predilection for one or the other side. It is never very severe and may be of an intermittent lancinating character or dull and continuous, occupying the ovarian region and sometimes radiating toward the groin or the kidneys. These crises are entirely apyretic. The painful symptoms may last but two or three days; exceptionally they may subside within twenty-four hours, or they may persist with the next menstrual epoch, when they disappear.

A mucous flow often accompanies the pain without any co-existing uterine affection. This may be clear, opalescent or pinkish Sometimes even pure blood escapes either in the form of a few drops or a continued flow. In general this discharge follows the same rules as to duration as does the characteristic pain, but exceptionally it may continue after the latter has ceased.

The uterine hydrorrhœa is the most curious symptom of these attacks; it occurs in coincidence with the pain of the tenth or twelfth day or follows the

same. The patient becomes conscious of a certain degree of moisture about the genitals or of a veritable jet of a hot vaginal discharge. Most frequently this sudden discharge of fluid occurs three of four times a day, while in some cases the first jet is followed by a continued discharge extending over a variable period and requiring the same precautions as the menstrual flow. The liquid is extremely limpid and watery, with a very faint light-brown tint, and does not stain or stiffen the linen.

The origin and nature of the aqueous flow is generally misinterpreted, as most cases are diagnosed as hydrosalpinx, emptying itself into the uterus in an intermittent fashion. The author has examined several cases a day or two before the onset of the hydrorrhœic crises and even during the same, and has never been able to discern any sign of tubal distension or even of any well marked affection of the adnexa. Moreover, in the exceptional cases in which a hydrosalpinx empties itself into the uterus, the evacuation occurs without any regularity, and has not the spasmodic character observed in hydrorrhœa of uterine origin.

The ætiology and pathogenesis of these crises are still obscure. They occur chiefly in women approaching thirty years of age, who, while not necessarily hysterical, are impressionable and hyperæsthetic. Nulliparæ seem to be most frequently attacked, but women who have borne one or more children may become subject to the crises. As a rule the general condition is good, the menstruation normal and regular. But careful interrogation will in most cases elicit the history of a slight abdominal inflammatory attack, occurring at a more or less remote period, and pointing to a perimetritis or a parametritis. Local examination reveals little or nothing; sometimes a small adherent ovary, the seat of ovaritis or peri-ovaritis. Briefly expressed, the attacks may be ascribed to minor lesions, especially those of the ovaries, occurring in neurotic subjects and producing vaso-motor changes in the uterus. They never extend beyond the menopause, nor do they last throughout the entire menstrual life of the patient.

The treatment is unsatisfactory. The uterine symptoms often lead to topical applications to this organ with naturally no good results. Internal administration of aconite, hamamelis virginica, hydrastinine, bromide of potassium, ergot and antipyrin have been tried with little effect. Counter-irritation of the ovarian region by means of chloroform or the actual cautery have given some measure of relief. Thyroid substance has lately been tried, but observations upon its effect have not been completed. Hydrotherapy has improved the general condition of the patients, but did not seem to relieve the severity of the attacks. Time alone seemed to have a curative power.

Austro-Hungary.

A Case of Primary Tuberculosis of the Vulva with Hypertrophy of the Clitoris resembling Elephantiasis.

E. R. von Karajan (*Wiener Klin. Wochenschr.*, October 21, 1897), reports a case of primary tuberculosis of the vulva in a child. She was two years of age when she first came under observation, in April, 1896. Immediately after birth she was perfectly healthy, but during her first year it was noticed that she frequently rubbed and scratched her genitals, and that she became subject to a conjunctivitis with photophobia. When she was a year old a tumor was noticed

in the vulvar region, which increased in size during the following year. Her appetite remained good; she had no cough or diarrhœa. The parents were healthy. Of their children, one had died of diphtheria and another of some indefinitely described pulmonary trouble.

Upon admission to the hospital the child's general condition was found to be good and her internal organs, especially the lungs, normal. Local examination disclosed an hypertrophied clitoris, measuring three by one and a half c.m., of a purplish color and uneven surface, studded with miliary nodules and pin-head-sized excoriations. The neighboring portions of the vulva were the seat of a chronic eczema. The diagnosis of elephantiasis clitoris was made, and the tumor excised under chloroform narcosis in May, 1896.

In March, 1897, she was again brought for treatment. Her general condition was unimproved. The lymphatic glands along the groin were swollen and tender. The labia majora and genito-femoral creases were swollen, red and covered with pustules and excoriations. At the site of the amputation stump was a conical, purplish tumor about two c.m. in length. At the right and posterior sides of the vaginal inlet was a large ulcer with ragged edges and an unhealthy-looking base; to the left a similar one, but smaller. Offers for further hospital treatment being rejected, she was sent home with an ointment for the eczema.

In May she was again brought. General health unchanged; conjunctivitis and photophobia increased; appetite unimpaired; bowels regular; lungs normal. The inguinal glands were still more swollen and tender. The eczema was considerably improved. The right labium majus was much increased in size, and the demarcation between it and the corresponding labium minus was well-nigh obliterated, so that both were incorporated in one large swelling, which was the seat of an ulcer, involving the entire introitus vaginæ, a part of the posterior wall of the latter and the posterior commissure. The walls of the ulcer were irregular and indurated, its base grey and the secretion muco-purulent. The secretion was examined for tubercle bacilli, but none were found. Microscopical examination of the excised portion of the clitoris revealed the presence of an extensive connective-tissue proliferation throughout the entire organ, and in the corium and subcutaneous tissue, numerous irregularly grouped white tubercles, each consisting of from three to seven tubercle granules of the epitheloid type. Giant cells were relatively scarce; in many places there was commencing coagulation necrosis, but extensive caseous degeneration did not exist. Each section contained one or two tubercle bacilli, which were invariably in the giant cells.

The author concludes by stating that the clinical pictures thus presented allowed of no other conclusion than that the case was one of primary tuberculosis of the vulva, and that the clitoris was the primary seat of the infection, as the microscope demonstrated the entire freedom of all the other organs of tubercular inflammation. He furthermore adds that the child in all probability had inoculated herself through the scratching induced by the eczema pudendi.

OBSTETRICS.

UNITED STATES.

Report of Four Cases of Ectopic Gestation, with History, Treatment and Remarks.

E. D. COONLEY (*Yale Med. Jour.*, November, 1897) writes as follows: Case I. was seen without knowledge of her previous history; she complained of great abdominal pain, was pale and had a rapid and feeble pulse; the uterus was somewhat fixed, and the right broad ligament tender and tense; an operation was performed, the tube ligated and excised, and the peritonæal cavity cleansed of the clotted blood that filled it; but the patient died in two hours. Case II. was taken suddenly with severe pain in the right groin, gradually extending upwards, local tenderness and vomiting; the next day the signs of internal hæmorrhage were evident. On operation blood was found oozing from the fimbriated extremity of the right tube, which was excised, the peritonæal cavity was washed out, and the patient eventually recovered. Case III. suffered from pain, sometimes severe, and irregular flowing for about five weeks, when an examination revealed an intraligamentous hæmatocele due to a ruptured pregnant tube; about a week later, as the tumor was increasing, the patient was operated upon; the blood had leaked out between the layers of the broad ligament, and the upper surface of the tumor ruptured at a slight touch of the fingers, showing that the operation was done just in time to anticipate a spontaneous rupture. Case IV. was of the order of Case I., and was operated on as soon as possible; a ruptured tube found and removed; but it was impossible to save the patient's life. These cases represent different types: Cases I. and IV. that in which there is a rupture upon the upper surface of the tube sufficient to allow free hæmorrhage into the abdominal cavity, and which demand operation sooner than it is generally possible to perform it; Case II. that in which the opening may be small or partially closed, or the hæmorrhage be from the fimbriated extremity of the tube, so that the progress of the case is slow enough to permit operative interference. The third case represents the type which may be treated expectantly, unless the patient grows weak or the tumor increases in size.

A Rare Case of Lithopædion.

J. G. CLARK (*Bull. of the Johns Hopkins Hosp.*, November, 1897) relates the case of a patient who applied for treatment for an abdominal tumor, dyspnœa and pain in the lower abdomen. She gave a history of a pregnancy—her fourth—four years ago, during the latter part of which she felt so weak that she was compelled to remain in bed; she had much œdema and became almost blind; fœtal movements were distinctly felt. At about term she had an attack of severe pain in the left side and felt something break, with the passage of much watery fluid by the vagina. Examination showed a tumor, smooth for the most part, hard with still harder projections, slightly movable, lying obliquely in the abdomen, and rather to the left side, its upper extremity being felt beneath the left lower rib, its lower in the right inguinal region, and apparently connected by adhesions to the anterior and lateral abdominal walls. The uterus was pushed forward, the left tube and ovary enlarged and a general ill-defined bogginess was found on the right side, which seemed to be closely connected with the tumor.

On opening the abdomen and breaking up the adhesions, the fœtal head was found in close contact with the spleen, the left arm and shoulder adherent to the abdominal wall near the umbilicus, the chest in close contact with the aorta. The fœtal head was grasped and delivered, and the cord cut close to its placental attachment. The fimbriated end of the tube was found adherent to the ectopic sac, having probably been torn from the rest of the tube at the primary rupture. The secondary sac was between the folds of the broad ligament, and, projecting up into the abdominal cavity,was adherent to the appendix, cæcum and intestine; secondary rupture had occurred, and the cord projected into the abdominal cavity. The placenta was large and attached to the floor of the pelvis; it was friable and had to be removed piecemeal. The ectopic was dissected free and removed from the right tube. A large cystic ovary and hydrosalpinx were removed from the left side. Twenty-eight days later the patient was discharged, cured. Examination showed the fœtus completely covered by a thin, translucent membrane, probably the amnion, which was closely adherent, but could be peeled off. Pathological and microscopical examination showed that the fœtus was undergoing saponaceous mummification and calcareous changes, the latter limited to the enveloping membrane, skin and lungs; the remainder of the internal organs showed only the changes due to fatty degeneration and absorption of their fatty constituents.

The Present State of our Knowledge of Puerperal Eclampsia.

J. L. Rothrock (*Northwestern Lancet*, November 15, 1897), says that after Bouchard's work, proving the toxicity of normal urine injected intravenously into animals, and after his own and the investigations of others, Chambrelent concludes that pregnancy causes the retention of poisons in the body, for the urine of a pregnant woman is less poisonous than normal; that this retention is still greater in eclampsia, for the urine of an eclamptic woman is less poisonous than that of one normally pregnant; while the blood serum of the eclamptic is more poisonous than normal. The toxæmic theory of eclampsia is now generally accepted, but we do not know the nature of the poison nor its origin; the latter is probably maternal, due to impaired metabolism and elimination. In seventeen autopsies upon eclamptics Schmorl has found constantly present lesions of the liver, which he calls hæmorrhagic and anæmic necrosis; these areas are surrounded by thromboses, which he regards as the primary lesion, due to some coagulating substance peculiar to the blood of eclamptics; he has found similar lesions in the brain, lungs, pancreas and kidneys. Thus these lesions would seem to show that the impaired function of the liver in destroying toxic materials, and that of the kidneys in eliminating them, is interfered with by the direct action of the poison upon their cells. The albuminuria, then, would be a secondary process, but from its almost universal occurrence, its importance in diagnosis is hardly diminished. The kidney changes in eclampsia seldom constitute a nephritis, are usually temporary, and, together with the albuminuria, may be regarded like those of the infectious diseases. That many cases of nephritis do not develop eclampsia when pregnant may be due to loss of excitability of the nerve centers from long continued action of the poison upon them. Regarding treatment, Veit and Olshausen rely on morphine, claiming that the failures of others with this drug have been due to insufficient doses. Veratrum viride acts by lessening the irritability of the nerve centers and by lowering the blood pressure. Pilocarpine has been pretty generally rejected. Venesection

followed by the subcutaneous injection of normal salt solution is now being used considerably and seems a reasonable method of treatment, though it is too early to speak of its results with certainty.

Rupture of the Uterus.

H. METCALF (*Atlantic Med. Week.*, December 25, 1897), describes the following case: The patient was a woman weighing three hundred pounds, and the occasion was her eighth confinement. The pains, after lasting four hours and being very violent at the end, had ceased four hours previously. External examination was useless; vaginal examination revealed what was thought to be a prolapsed cord, but turned out to be a part of the small intestine; the uterus on inserting the hand, was found to be filled with intestines and placenta, and to be torn on the left side from the fundus almost to the cervix; it was contracting well. Operation was somewhat delayed; an incision was made in the linea alba, the head presented, and a large male child, dead, was delivered. Owing to the great size of the patient, it was impossible to reach the uterus to sew the rent. Hæmorrhage had not been very severe, the abdominal cavity was flushed out with warm water, and the incision closed. The patient died of shock ten hours later. While laparotomy under favorable conditions is the best treatment for such cases—suturing if the uterine tear is clean cut, a Porro if it is ragged—recovery has followed expectant treatment; and it is a question if such treatment would not have been better in a case like the one reported, where every condition was unfavorable.

Physical Uterine Signs in the Early Stages of Pregnancy.

A. R. MARTIN, (*Denver Med. Times*, December 7, 1897), discusses the size, shape and consistency of the early pregnant uterus. The increase of size is by itself of little value, being caused by so many other conditions. In the pregnant uterus, contrary to the rule in metritis and intra-uterine tumors, the transverse diameter increases more markedly than the antero-posterior; anterior rotation by drawing up the anterior vaginal wall makes it more intense and the cervix shorter. The peculiar "boggy" feel of the pregnant uterus is a sensation as if the finger could penetrate the organ, while still no pitting is left. Often the anterior wall is more "boggy" than the posterior, probably because it is the site of placental implantation. Hegar's sign, mistaken by some authors, should be obtained with the thumb in the vagina and finger in the rectum, while downward pressure is made externally, is a soft, parchment-like sensation to the touch, and is found at the junction of the supravaginal portion of the cervix with the fundus, decreasing downward toward the end of the cervix; the same condition is also found at the junction of the tubes with the fundus; the softening and thinness at these points give the finger an impression as if the uterus had lost its pelvic connections.

GREAT BRITAIN.

A Case of Puerperal Septicæmia treated by Antistrepticoccus Serum—Recovery.

L. DURNO (*Brit. Med. Jour.*, October 20, 1897), confined a primipara at a normal labor May 2. May 5 she had a chill, followed by a temperature of 104 degrees and a pulse of 140; there was local pain and tenderness and fœtid lochia. In spite of the usual measures she grew rapidly worse, the temperature on the following evening being 106.2 degrees; 10 c. c. of antistreptococcic serum

were injected under the skin of the right side of the abdomen. The next morning she was much improved, but by night was again worse, and still worse on the morning of the 8th; on each of these days the serum was administered and also on the 9th, 10, 11th and 12th, during which latter time the improvement was steady; on the morning of the 14th she had a severe urticarial rash over all the body, and in the afternoon a chill followed by a temperature of 104 degrees, much pain and sickness; the following day she was better, but on the 16th she had pain and tenderness over the left hip-joint, and by the 18th almost every joint in the body was invaded and there was thrombosis of the right femoral vein; on the 19th 20 c.c. of the serum was injected. The next day the temperature was 104 degrees, and about the site of the last injection the skin was hard and infiltrated, and presented the signs of a phlegmonous erysipelas; the general condition improved, however, and on the 25th a large abscess in the abdominal wall was opened, after which the patient made a good recovery. The cause of the primary infection was the nurse's using a syringe that had been used for washing out an abscess some twelve months previously. The urticaria rapidly disappeared under quinine. The abscess that followed the last injection the writer is unable to explain, as every precaution was taken as usual.

PÆDIATRICS.

UNITED STATES.

Medical Supervision of Schools.

L. K. BAKER (*Cleveland Med. Gaz.*, November, 1897), says that school hygiene should concern itself with the following matters: school diseases, of special senses, skeletal, nervous, respiratory, infectious, contagious and parasitic; personal hygiene; hygiene of instruction; physical training; school grounds, buildings and rooms; seating and desking; ventilation and sewerage and cleaning. Many cases of defective hearing are overlooked and interpreted as dullness or inattention; much also should be done for myopia in the matter of prophylaxis. The same is true of curvatures of the spine, most of which occur before the children pass the fifth grade. Nervous diseases are much more common in the higher grades. The fact that inspection for one week in the primary schools of New York City revealed 477 cases of contagious diseases of the eyes and skin, and parasitic diseases, shows the necessity of supervision in this regard. Regarding personal hygiene, the teachers should give instruction upon food, clothing, sleep, cleanliness and bathing; school baths are an excellent thing. Physical training seems to be little understood. Four things should be constantly in view: good posture of carriage, the circulatory and respiratory systems and recreation. Teachers must know what good carriage is, how to explain it, and how to encourage it by proper exercises. Exercises should be employed at frequent intervals that place the muscles supporting the spine in both tonic and clonic contractions; this process, together with the *habit* of correct carriage will usually prevent curvatures of the spine. It relieves the passive congestion caused by the working position at the desk, and develops the heart and muscular coats of the arteries. Frequent breathing exercises also

develop the capacity of the lungs and the mobility of the chest walls, and train the muscles of respiration. It should be the constant aim to make these exercises and the pauses therefor real recreations.

The Present Mortality of Diphtheria; Upon What Its Further Reduction by the Use of Antitoxic Serum depends.

I. N. SNIVELY (*Med. News*, November 20, 1897), says that future improvement in this respect depends on still greater improvement in the production and selection of the remedy, upon the general acceptance of serotherapy, and upon the employment of the remedy on a rational rather than on an empiric basis. The greatest improvement in the serum has been in its concentration. The full therapeutic effect is thus secured much earlier—nowadays in from twelve to eighteen hours. Inasmuch as the effect of diphtheria is a toxic one, and the longer the tissues are exposed to its action and the more violent this poison is, the more surely fatal is the result, we can understand the necessity of large and early doses of the antidote, supplemented by appropriate general treatment. The importance of the initial dose cannot be too strongly emphasized; from 1,000 to 6,000 units may be used, according to the severity of the case. That a second dose is required shows that the first was not large enough. When repetition is required, the interval should be short. In the malignant or laryngeal forms, from 2,000 to 4,000 units should be given immediately, one large dose being more efficacious than several small ones, for there is always danger of neutralizing the absorbed toxins so slowly or so late that death results from the damage sustained before the exhibition of the remedy.

Case of Intussusception.

S. BIRDSALL (*Med. Council*, December, 1897), saw a boy, aged eight years, on the fifth day of his illness. He had had vomiting, pain in the right side of the abdomen and bloody stools, there was some tympanites, but no marked prostration and no tumor, nor could anything be discovered on rectal examination. A diagnosis of intussusception was made, but it was thought too late to attempt reduction. Small doses of calomel were given, and the patient put on milk and lime water. He began to improve, and on the ninth day passed a large mass of intestine, which, being unravelled, consisted of four inches of the ileum and five inches of the ascending colon, including the cæum and appendix. The appendix was two inches in length and about half an inch in diameter, its extremity thickened by an old inflammatory action. The heavy end of the appendix had passed down the large lumen, invaginating but not wholly inverting the appendix; and this inversion once begun had probably continued till the parts described of the large and small intestine were dragged into the ascending colon.

A Case of Symmetrical Congenital Gangrene.

HENRIETTA A. STOFFREGEN (*Woman's Med. Jour.*, December, 1897), reports the following case of a child born after a two hours' dry labor, there being no amniotic fluid. The whole face was covered with closely adherent amnion, which was removed. The skin on the face, body, upper arms, thighs and genitals was of a bright scarlatiniform red; upon the forearms and legs it was hard and dry, like tanned leather; upon the hands and feet it was soft, moist

and easily removed, while about the wrists and ankles there was a line of demarcation without cuticle. Where the skin was red or dry desquamation occurred, like that of scarlet fever; upon the hands and feet the skin dried in a few days and also peeled. The process was completed in about four weeks, treatment consisting simply of cleanliness and the use of compound talcum powder. It was certain that the child was born at term, but when the amniotic fluid is small in quantity in early pregnancy, the separation of the amnion is delayed, with resulting malformation or arrested development from constriction, and the writer considers this one of congenital gangrene of the skin from pressure of the uterus, allowed by the absence of the amniotic fluid.

Case of Cystic Dilatation of the Common Bile Duct in a Child.

R. H. RUSSELL (*Ann. of Surg.*, December, 1897), describes the case of a boy, eight years old, who had been sick for five days with fever, jaundice, pain in the stomach and right side, and constipation, only one movement—putty-like and offensive—having been passed in that time. The urine was bile-stained and for three days there had been a swelling of the right side of the abdomen. Examination revealed a tense, elastic, tender tumor, its dullness on percussion being continuous with the liver dullness above, extending downward an inch below the iliac crest, inward nearly to the midline, and posteriorly occupying the entire lumbar region. A second tumor, of the size of a pigeon's egg, round, soft, elastic and painless, projected beneath the rib cartilage at the linea semilunaris. The large tumor was thought to be an echinococcus cyst that had hitherto escaped notice, and the small one either another cyst or a distended gall-bladder. The fever might be caused by suppuration in the cyst, though the temperature fell to normal after a calomel purge; or the case might be simply catarrhal jaundice in a subject of hydatid cysts. The child was watched for sixteen days, suffering daily from attacks like hepatic colic, the obstruction remaining complete, and the temperature varying between 99 degrees and 100 degrees F. An operation was then performed, and the smaller tumor found to be the gall-bladder; the larger cyst, which was found to be retroperitonæal, was aspirated, the fluid being clear and containing a few blackish masses, like cinders; the last ounce or two was less clear and distinctly mucinous. With the escape of the latter fluid the gall-bladder collapsed, showing that the retroperitonæal cyst communicated with the common bile-duct and was probably of pancreatic origin. After the operation, all the bile flowed from the opening in the abdominal wall. There was no admixture of pancreatic fluid, nor was there an excess of fat in the stools. Four days later the child died from uncontrollable oozing of blood. The autopsy showed the cyst communicating with the gall-bladder through the dilated cystic duct; the duodenum and pancreas were spread over the outside of the cyst. A small valvular opening on the interior of the cyst proved to be the orifice of the common duct.

The possibility of such an affection of the common bile-duct does not seem to have been recognized. We may consider that it was congenital or caused by a partial or intermittent obstruction of the duodenal orifice; but the magnitude and asymmetry of the distension, and the lack of previous history would forbid the latter supposition; it seems, therefore, that the condition was analogous to that of congenital hydronephrosis. Probably, then, during the child's previous life, the passage of bile through the cyst was natural, till some obstruction, probably catarrhal, of the duodenal end of the duct caused distension of

the cyst and all the bile passages; and as the duct from the cyst to the duodenum lay for an inch in the cyst wall the obstruction would be increased with the increase of tension in the cyst, and the flow of bile would not be re-established with the passing away of the catarrhal swelling. It is therefore possible that one or more aspirations of the fluid might have produced a cure. As it was, had the child lived, a cholecystenterostomy would probably have been done, and the real condition remained unknown. The colorlessness of the fluid was due to the reabsorption of the bile pigments. Examination showed it to be strongly alkaline, with traces of albumin, globulin and bile pigment. Its specific gravity was 1012; the cinder-like masses were composed of bilirubin.

Susceptibility of Infants to Tuberculosis: An Illustrative Case.

L. BRUCKHARDT (*Atlantic Med. Week.*, December 4, 1897), writes of the case of a healthy baby, eight months old, who, after the return home of a consumptive brother, developed a cough, pneumonia and finally meningeal symptoms, and died in six weeks. The autopsy showed miliary tuberculosis of the lungs, liver, spleen, brain and meninges, originating from cheesy degenerated bronchial glands. The disease probably was not acquired from the air expired by the brother, such expired air being almost free from germs; nor from direct transmission of sputum (though the brother kissed the child and fed it with his own spoon) for the alimentary tract was healthy. The infection was therefore probably due to the inspiration of dried sputum; and it seems likely that this danger is considerably greater for a baby than for an adult, as the germs, from their high specific gravity settle to the floor, where babies are customarily kept, and where, by their active play, they keep the dust in motion. From the draughtiness of the floors, moreover, ordinary colds arise, which form a favorable basis for specific infection. Just what we are to do with a baby in a house with a tuberculous patient, the author does not say—whether it would be better to lay it carefully on the mantle or to suspend it from the ceiling —but at all events it should not be allowed to play on the floor.

THE

AMERICAN GYNÆCOLOGICAL

AND

OBSTETRICAL JOURNAL.

MARCH, 1898.

EXPERIMENTAL RESEARCH INTO SURGICAL SHOCK IN ABDOMINAL AND GENITO-URINARY OPERATIONS.*

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There is presented in this paper a summary of the conclusions of one part of a general research into surgical shock. The whole research included experiments on more than two hundred dogs; the animals were reduced to surgical anæsthesia before the experiments were begun and allowed to die before recovering from the anæsthetic. The experiments were performed in the physiological laboratory of the Cleveland College of Physicians and Surgeons. After the animals had been anæsthetized, the various operations were performed, and the results noted by means of the graphic method whereby the alterations in the respiration and the blood pressure were recorded. These records have been preserved, and there is no statement made which cannot be amply verified by records in my possession. Chloroform or ether anæsthesia, while preventing the appreciation of pain, does not prevent other afferent impulses affecting the vaso-motor, the cardiac, and the respiratory centers. These latter impulses were found to be the essential causes of shock. The various phases of this question will be elsewhere discussed.

Abdominal wall.—Incision through the abdominal wall. In making the incision through the skin in abdominal sections, there was frequently noted a fall in the blood pressure; this, in fact, was the rule. Upon making control experiments by producing slight pressure upon the abdominal wall a rise was observed, but the rise was only temporary. Cutting muscles and fascia produced little or no effect; on

* Read before the Chicago Obstetrical Society, December 17, 1897.

opening the peritonæum a fall was noted; in some cases there was no immediate effect. In exposing the abdominal contents *in situ* to contact with air, there was usually a gradual fall after some time had elapsed.

Peritonæum. Contact, however slight, with the parietal or the visceral peritonæum, caused markedly arhythmic respiratory action; the amplitude was markedly, sometimes very greatly, diminished or increased and the curve broken and irregular. The diaphragmatic peritonæum produced the most marked respiratory changes. Continuation of the manipulation does not secure tolerance unless confined to the same area. We have many evidences of exhaustion of the respiratory apparatus by continued peritonæal excitation. The application of hot or cold water, especially the former, caused a very great increase in rapidity and depth of respiration. Exposure of the peritonæum or its manipulation caused rapid dilatation of the vessels of the mesentery and of the hollow viscera. The viscera became, at first red, and, after further exposure, gradually livid. The rapidity of the development of the lividity was somewhat in relation to the respiratory as well as the circulatory disturbance. The mesenteric veins became more prominent, especially the small venous radicals at the base of the intestines. On long exposure and great irritation by manipulation even the clear, transparent peritonæal spaces in the mesentery showed vessels and sometimes became red. The arteries at first seemed larger and pulsated more distinctly, but later, when the blood pressure had become quite low and the intestines livid, scarcely any pulsation was visible. With the development of these vascular changes, the blood pressure *pari passu* declined. The more severe the injury, the greater the extent of contact and exposure, the more quickly and rapid was the decline of the blood pressure. In a few instances there was a preliminary rise, giving way to a decline later. Then again, in occasional instances, there was no notable change in blood pressure until as much as a half an hour had elapsed. Extensive and continued manipulation for as long as twenty minutes, and in one case half an hour, of experiment, scarcely altered the pressure. In weakly dogs or later in an experiment, the rate of decline in pressure seemed proportionate to the animal's condition. A water manometer in the splenic vein, with its canula pointing toward the heart, showed a decided rise in a number of observations during the developments of splanchnic shock; while the central blood pressure was declining, the central portal was rising, showing an increase of blood in that area. In a series of experiments, the arterial supply of the splanchnic area, the cœliac axis, and the mes-

enteric arteries were clamped subperitonæally by making an incision along the anterior border of the rectus muscle and separating the peritonæum up to the diaphragm and over the abdominal aorta. With the splanchnic arteries thus clamped, no amount of manipulation would cause the characteristic decline as before.

Directly upon withdrawal of the intestines, in some instances, there was a sudden fall in the central, with immediate compensation following. This sudden fall may have been due to mechanical interference with the vena cava inferior or its tributaries. However, on slapping the intestines it was noted that they contracted, became paler and the central pressure would rise instead of fall. These observations were made a number of times. Attempting to find an explanation of this additional rise, the cardiac branches of the stellate ganglia were severed in addition to clamping the splanchnic arteries. On repeating like treatment of the intestines, there was sometimes observed a slight rise in the central blood pressure; but as well as could be estimated, not nearly so marked as before. The rise which now occurred could not be made to be repeated, while formerly it could be repeated on repeating the slapping and striking of the intestines. It would appear, then, there are also accelerating impulses which pass from the intestines through the cardiac branches of the stellate to the heart and probably to the vaso-motor centers as well. The slight rise which could not be made to repeat itself after the cardiac branches had been cut out was probably due to muscular contraction of the intestinal walls and contraction of the veins, causing an additional amount of blood to flow to the heart, and the veins not receiving a new supply, an additional amount of blood sufficient to cause this rise in central pressure could not again be forced out of the comparatively empty veins by such stimulation. Clamping the superior mesentery alone, as nearly as could be estimated, very greatly diminished the usual rapidity of the development of splanchnic shock. With all the splanchnic vessels clamped, if, in addition, the abdominal aorta was clamped, there was, as usual, a considerable immediate rise in the central pressure; however, this rise was maintained and the usual prompt compensatory fall without clamped splanchnics did not occur. Such observations were repeatedly made and would support the belief that the splanchnic area is the important compensating or regulating area of the circulatory apparatus. When the splanchnics were unclamped there was a staggering fall in the central blood pressure, and, although a compensatory rise was promptly inaugurated, it, in no instance, reached the mean pressure level. When compensation had developed as far as possible and a

further intestinal manipulation was made, an immediate further fall was noted. While an animal was quite fresh, compensation, after a fall in pressure incident to the dilatation of the splanchnic vessels may occur; but it is usually not complete. In a weak animal or late in an experiment, compensation was rarely observed, even to the slightest degree. The decline was steady until death. The blood vessels of the large intestines are comparatively less affected than the small, the gastric vessels more than those of the large intestines, but probably less than those of the small intestines. The pelvic peritonæum, as nearly as comparative observations permit deductions, contributed less to the production of shock than the abdominal peritonæum proper. The omentum is precisely the antithesis of the foregoing; when any effect was obtained, it was a rise of blood pressure, a rising curve quite comparable to that following injury of the skin. The omental vessels manifested but slight dilatation after severe and continued irritation during which the vessels of the hollow viscera were extremely dilated.

Extra-peritonæal dissection did not effect either the respiration or the blood pressure notably, unless the splanchnic nerves had been involved, when there followed a decided dilatation of the splanchnic vessels and corresponding fall in blood pressure.

Liver.—Aside from the mechanical effects from forcing blood from this vascular organ by pressure and the effects of contact with its peritonæal covering, as above indicated, no special effects were observed. Dilatation of the cystic duct caused no appreciable effect. Manipulation of the gall bladder caused a marked temporary fall; but it is extremely probable this was due to mechanical interference with the blood current in the larger venous trunks lying in such close anatomical relation.

Kidneys.—Cutting, contusing, crushing, or any other mechanical injury of the kidney, caused no notable effect in a single instance, except when there chanced to be peritonæal contact. The same may be said of nephrectomy performed a number of times.

Supra-renal bodies.—On similar treatment, a rise in the blood-pressure was noted in a number of instances. No separate vaso-motor effects were noted.

Spleen.—No special results were noted other than when that organ was compressed; there was an immediate small rise probably due to forcing out blood from its vascular meshes. Splenectomy was performed a number of times and with practically no effect.

Bladder.—Cutting, compressing, over-distending, or otherwise injuring the bladder, caused a rise in the blood pressure, if any effect at

all was produced. In many of the observations no effect was noted. Pressure upon the full bladder produced the most marked results.

Uterus.—Incision, contusion, manipulation, or any other mechanical injury of the uterus, caused uniformly a rise in the blood pressure. The rise appeared rather tardy, but was in many instances very marked. Sometimes the pressure gradually declined to its former level, but tended to remain, for some time at least, at the level to which it rose. Repeating the injury at intervals before compensation occurred, raised the mean pressure very considerably, comparable to the rise caused by clamping the abdominal aorta. Cutting the cardiac branches of the stellate does not prevent the rise. While conclusive proofs are not at hand, there is considerable evidence that the rise is due to vaso-motor action. What has been said of the uterus may be said of the ovaries and oviducts and in importance in the order given. Ten bitches each furnished repeated observations on these points; Cæsarean section was twice made and noted for the absence of any changes in the pressures during operation.

Male genital organs.—Cutting the testicles, spermatic cord, tunica vaginalis and frequently even the skin of the scrotum, caused, in most instances, a fall in blood pressure appearing after a considerable interval. Manipulation, though gentle, of the testicle nearly always caused a very marked fall in central pressure; the same observations were made with regard to the spermatic cords. In short, any manipulation of any part of the testicle—its coverings or the spermatic cord —was attended by a marked, sometimes exceedingly great, fall in blood pressure. While the center pressure was falling, the portal was usually as markedly rising as evidence of splanchnic dilatation as the cause of the fall. The blood pressure usually recovered completely, or nearly, its former level. These observations were made 53 times and occasionally, though rarely, no fall was marked. Respirations were slowed and shortened and in some instances irregular. Injecting cocaine into the organ, into the tunica vaginalis, or into the spermatic cord after a control had been first obtained, then repeating like operative procedures, no fall occurred in central and no rise in portal; neither were the respirations altered. Following an injection of a sufficient quantity of atropia into the jugular vein after securing an inhibitory laryngeal control, thus proving the atropia competent to abolish cardio-inhibitory impulses, the testicle was subjected to experiments similar to the above and the usual fall in pressure followed. The fall was not prevented by preliminary section of the vagi. This is taken as evidence that the fall is probably not due to a cardio-inhibitory effect. Jugular

injections of cocaine did not prevent the fall in the pressure, though, as nearly as could be judged, the fall was considerably less than in the controls.

Penis.—The same may be said of the penis, though the alterations were not observed to be produced in nearly so marked degree.

Vagina.—Forcibly dilating, or otherwise injuring the vagina caused an increase in depth and frequency of the respirations and usually a rise, though occasionally a decline in blood pressure. In several instances there was no effect on blood pressure, but respiratory action was increased.

Anus.—Forcibly stretching the rectum and anus causes sometimes a rise, sometimes a fall, in blood pressure and an increase in the frequency and the depth of respiration. There is considerable evidence that the fall in pressure was due to mechanical interference with the flow of blood in the venous trunks, viz.: the fall appeared almost instantly, and the manometer in the femoral vein showed a rise at the same time that the central was falling.

II. FACTORS PRODUCING SHOCK.

1. *Duration of Operation.*—The duration of an operation was found to be an important factor in the production of shock. Animals may be killed by the effect of continuous anæsthesia alone, though carefully administered, so that a percentage calculated upon the ratio between the actual duration of anæsthesia and the average length of time a dog may survive continuous anæsthesia is allowed the pure anæsthetic factor in any given case; that is to say, if ten hours may be allowed as the average length of time a dog may live under continuous anæsthesia, and a given experiment lasted two hours, then 20 per cent. of the cause of death was calculated to have represented the anæsthetic factor. This calculation applies to ether. There is strong evidence tending to show that chloroform, even barring accidents, is a more potent factor in destroying the animal than is ether. The element of time in relation to the exposed field, may be stated as follows: contact with air is a very great irritant of local tissues, owing to the lowering of local temperature and to the drying. The effect of exposure is strikingly observed in case of the peritonæum, pleura and brain. Exposure affects particularly the vaso-motor mechanism. If a bloodless field of operation, the thigh for example, be exposed, it soon becomes suffused with blood, all the vessels become dilated, the translucency of the tissue is lost and further dissection then becomes bloody. The brain.

when exposed, soon becomes abnormally irritable, and, in faradizing the cortex over a given motor area, say the foreleg, there will likely be an over-action. Many adjacent centers may become excited and not infrequently a general convulsion is produced. However, after a time the hyper-excitability is followed by non-excitability. In the fresh state, or when kept covered with normal salt solution, within certain limits of time the motor discharges correspond with the area of cortical stimulation. The same may be said of nerve tissues generally and the importance of preventing exposure of the brain, the cord, the vagi, the splanchnic and other special nerve tissues must be ever in mind. Exposure of the thoracic cavity causes great disturbance of respiration and the time should be as short as possible. Exposure of the capacious splanchnic area is attended by a rapid dilatation of the splanchnic vessels, leading to intense congestion, detracting thereby a dangerous amount of blood from the somatic circulation, inducing a rapidly declining blood pressure. Even the apparently bloodless spaces in the omentum on exposure become red. Not only does exposure of the peritonæum cause splanchnic vascular dilatation, but also the respirations are unfavorably affected as well. The element of time in abdominal operations, in every experiment, was unmistakable. In animals subjected to extensive removal of integument, shock was induced in rapidity in proportion to the area of exposure; and in depth to the duration of exposure. The exposure of the tissue, as a factor in the production of shock, was believed to bear a direct ratio to the area and the duration of the exposure.

2. *Temperature.*—Observations on this point must necessarily be relative, but it seemed to us that when the opened tissues were exposed to cold air in the laboratory during winter experiments while the heating apparatus had been temporarily out of order on account of freezing, the animals seemed to succumb more readily than under the ordinary warmth. The effect of the cold water on the intestines and intra-venous cold saline solution showed more directly the depressing effects of the cold. Then again, the direct effect of warm towels applied to the exposed intestines, of warm saline in the abdomen, improved the respiration directly and, as nearly as could be estimated, caused at least a check in the declining blood pressure. The striking contrast between the effect of cold and warm salines on the exposed nerve fibers, and especially on the exposed cortex cerebri, was repeatedly noted. In electric stimulation of the motor areas, it is entirely essential to keep the cortex warm in order to obtain the best motor stimulation; indeed, a cool cortex very soon becomes non-excitable.

In a number of observations of the rectal temperature, a gradual decline, with but one exception, and that only at the beginning of the experiment it rose ½°, was always observed; in one instance, the temperature fell as low as 34.9° C. Iced saline caused a fall in pressure when the first flow reached the heart; however the pressure soon rose; in warm solution, preliminary fall in no instance was noted. Local cooling, or even freezing of a part likely to contribute to shock, would, to the extent it blocked afferent impulses, prevent shock; but reaction is always to be considered, and, besides, our observations are more especially directed to the systemic effect rather than to the local.

3. *Physical condition.*—Animals in impaired health, insufficiently nourished, too young or too old, are correspondingly bad subjects; even the laboratory servant's estimate of any given animal as to its value for a protracted experiment was usually well taken. Pregnancy did not seem to impair the resistance, but this statement rests on comparative observation. In bad subjects and after shock had been fairly induced, the reflexes were never so acute, vaso-motor actions were sluggish and ineffectual, and when the blood pressure declined, it was, as a rule, slowly or never regained. Animals having firm tissues seem to have greater resistance. Gross tissue resistance proved to be of a very fair index to vital resistance.

4. *Anæsthetic.*—So important a rôle is played by the anæsthesia that it was necessary to be constantly watchful, and when sufficient assistance could be obtained we supplied a special anæsthetizer. The respirations in over-anæsthesia became gradually more shallow and slowed, and if continued, would fail suddenly. The blood pressure *pari passu* gradually fell. Upon removing the ether, both would rise, much as they fell. When the animal was about to come out respirations gradually deepened and quickened, and the blood pressure curve became irregular, precisely the reverse of the process in the entrance into the state of anæsthesia too profound. The respiratory indications were usually in advance of any other symptom in foretelling the tendency of the anæsthesia. The effect upon respiration was so constantly in advance of other effects, for example, the circulation, that the latter was habitually neglected; and in no instance, excepting in several cases while inducing chloroform anæsthesia, was there a sudden failure of the heart. If the animals were allowed to partially recover from the anæsthesia, care was necessary in reducing them to surgical anæsthesia, as the tendency to hypernœa attends this state, and an excess of the anæsthetic was likely to be inhaled. The exhausting over-respiratory efforts predispose the center to failure, and special

care was always necessary at this point. The more the animal had been subjected to operative procedure, the more readily the respirations failed under the above conditions. In abdominal operations, contact with the peritonæum caused an increased, though irregular, respiratory rhythm, and this was occasionally mistaken for indications for more anæsthetic. Chloroform required much greater care than ether; ether, in no instance, caused sudden cardiac arrest; chloroform, three times—each time early in the inhalation and before surgical anæsthesia had been induced. When, accordingly, more anæsthetic was administered, a profound depression was produced.

5. *Hæmorrhage.*—Loss of blood always predisposed to shock, and when there was considerable, even if it caused but little depression in the blood pressure, the animal did not withstand so severe or so protracted an operation. Hæmorrhage from the large venous trunks caused the most profound effect upon the blood pressure, because the heart was immediately supplied with a diminished amount of blood, while, if arterial, the income of blood was not so suddenly diminished. The output of the heart does not depend at all upon the height of arterial pressure, but is in direct proportion to the venous pressure. Inasmuch as the venous pressure is more directly lowered by venous hæmorrhage, the observed facts are in accord with the observations of Donaldson on the output of the heart. Dogs having enlarged thyroids have usually disproportionately large carotid arteries. Their blood seems to clot less readily, hæmorrhage is everywhere more free and there is less tendency to spontaneous arrest. Hæmorrhage is especially free in the neck. It has been said by able clinicians that shock was another name for hæmorrhage, but in a large series of bloodless operations animals have succumbed. In this series of observations, unless particularly mentioned, there has been no consequential hæmorrhage. Respirations are always accelerated and deepened in profuse hæmorrhage. A given amount of loss of blood when the animal has been already reduced to surgical shock caused more depression than an equal amount earlier when the compensating vasomotor mechanism was more active.

6. *Vaso-motor.*—There is sufficient evidence at hand to establish at least a high degree of probability that the shock in operations on the splanchnic area is largely caused by disturbance of the local splanchnic vaso-motor mechanism. The experiments of Mall showed that the splanchnic nerves are vein nerves and control this large and spacious vascular area. Every experiment in this area gave evidence of the dilatation of the vessels controlled by these nerves and the decline

of the pressure occurred *pari passu* with this dilatation. A water manometer inserted toward the heart, in the splanchnic vein, showed a rise in pressure, while the central was falling; there being no valves in the veins of this area, the manometer probably correctly registered the portal pressure. The entire splanchnic area, excepting the distal part of the splenic vein, was left unimpaired. The spleen was either extirpated or its arterial supply clamped. So far as could be determined by direct observation, the veins were much more dilated than the arteries; in fact, toward the close of the experiment, when the veins were much engorged, the arteries were comparatively small. While the vaso-motor mechanism played an important part that it is not the whole cause, rests on the following evidence:

Clamping the thoracic aorta or the splanchnic arteries retroperitonæally to effectually remove this area of vessels as a factor, on extensive and continuous manipulation and operation the intestines became paler than normal and the veins comparatively empty. However, death was, under these conditions, caused from shock by mechanical injury of this area, though not so readily as in cases in which the splanchnic arteries had not been thus clamped. The blood pressure does not suffer decline as under normal conditions, but the respirations were effected no less than under normal conditions and after continued manipulation of the intestines the respirations became gradually more shallow and usually failed before did the heart. The latter grew gradually weaker and finally failed, thus dying independent of the vaso-motor splanchnic factor. It must be observed, however, that the animal with excluded splanchnic circulation endures much more splanchnic injury. The great shock caused by injuries of the male genital organs is probably due largely to vaso-motor dilation of the splanchnic area. The gradual decline of blood pressure preceding death in most of the prolonged experiments was interpreted as a vaso-motor breakdown and from this state an animal could rarely be even temporarily raised.

7. *Cardiac.*—The heart stands at the base of support to the blood pressure, and any interference with its action at once causes marked changes in the pressure. The output of the heart is in direct ratio to the pressure of the vena cava and not at all to the height of the blood pressure. The venous pressure, then, determines the heart's output and the venous pressure is dependent upon the force and frequency of the heart beats, together with the necessary vascular tone which is under control of the vaso-motor nerves. If, then, the area of peripheral resistance is lessened, the venous pressure will be diminished

and so the output of the heart will be diminished. Supposing the peripheral resistance remained unchanged, if the heart's action be diminished in force or frequency, or both, the venous pressure will fall *pari passu* with the central; and again, with the lowered venous pressure, the output of the heart would be diminished. The cardiac action and the peripheral resistance remaining the same if venous hæmorrhage occurred or if there was mechanical interference with venous flow, the venous pressure would be lowered and the output of the heart diminished. Other things remaining the same, an increased output of the heart causes a rise in the pressure and vice versa. This was repeatedly shown by the effect of the infusion of normal salt solution. The efficiency of the heart action may be diminished by an over-stimulation or by a continued use of stimulus. Exhaustion follows such over-action. There may be over-stimulation of the augmentary mechanism, especially that of the brain. The heart action may also be interfered with by the excitation of the inhibitory impulses, as in operations involving the inhibitory area in the larynx, brain, etc., as elsewhere described, often causing a staggering fall in pressure. The heart action is also greatly dependent upon efficient respiratory action, as is shown in a number of instances in which respirations have failed, the heart, beating on in sweeping strokes, soon stopped. Also, upon producing artificial respiration, the heart, after a quiescence of as much as fifty seconds, in one case, began action again. The peripheral pressures usually paralleled the central, showing their variations were caused by changes in the heart action. The diminished temperature of the blood, previously referred to, might be a cause of impaired heart action. Upon this point we are not prepared to offer any new evidence.

8. *Respiration.*—In 103 of the experiments in which the exact manner of death was recorded, or, in which, in the course of experiments, either the heart or the respiration failed first; respiration failed first in 90, the heart first in 4, and both simultaneously in 9. In many instances, the heart was beating strongly, and the blood pressure good at the time respiration failed. Artificial respiration was frequently required during the course of the experiments. The greater the extent of the dissection, and especially if dissection had been made in the thorax or the abdomen, respiration became more readily exhausted. In bloodless amputations of the hip joints and other mutilating experiments, death was sometimes caused by respiratory failure. Almost every injury causing any effect on the circulation causes respiratory changes, usually more striking than the vascular, and, in many experi-

ments, notably in the splanchnic area, respirations were more sensitive to irritation than was the circulation. In traumatisms of the brain, the respirations were strikingly more affected than the circulatory, and the immediate cause of sudden death from traumatism of the brain was, in almost every instance, failure of respiration. In one gunshot wound, where the medulla was not touched but only affected by the percussion of the ball, death was caused by respiratory failure. In gunshot wounds of the chest, in cases in which large vessels of the heart were not penetrated, death was caused by respiratory failure. In laryngeal operations and injuries, respirations were very easily inhibited. In almost every instance of dangerous anæsthesia the respirations were most effected, and frequently stopped suddenly. The heart could be depended upon to continue beating until the establishment of artificial respiration. With the amount of evidence this research has furnished bearing on the sensitiveness of the respiratory mechanism, we are led to estimate it as one of the important factors in the production of shock.

Post-Mortem Appearances.

Autopsies were made in a large number of the animals, and, generally speaking, the following conditions prevailed: the large venous trunks were full, sometimes enormously engorged, the arteries empty, the veins of the splanchnic area not more distended than those of the somatic, unless the experiment had included some procedure in the splanchnic; the left ventricle and the left auricle empty; the right auricle usually contained some blood, the right ventricle but little or none; the lungs anæmic; pulmonary vessels empty; tissues of the brain and of the somatic area anæmic; liver usually engorged; spleen and kidneys somewhat less so. The disposition of the mass of blood was, in a number of cases, observed by making the necessary dissection during and before death.

On the Prevention of Shock.—The less the insult to the tissues, the less was the shock; the less the hæmorrhage, the lighter the shock. Not only the amount but the method of the administration of the anæsthetic was found to be important. The horizontal postures, or the head inclined were most favorable. Mechanical interference with the large venous trunks was found necessary to avoid. The abdominal cavity is shock-producing in something like a direct ratio of the distance from the pelvis; the region of the diaphragm, especially the pyloric region, is probably greatest and the floor of the pelvis least shock-producing.

Preliminary administration of alcohol did not seem to favorably effect the results. The same may be said of morphia. Atropia, on the whole, seemed to diminish the amount of shock; but on account of taking off thereby the vagal control from the heart the blood pressure curve was very irregular. Cocaine, hypodermically, to a very great extent prevents vaso-motor splanchnic changes; and the general blood pressure in the cocaine experiments was almost as well sustained under like procedures, as in the experiments in which the splanchnic arteries or the aorta had been closed previous to the splanchnic experiment.

On the Treatment of Shock.

1. Aqueous extract of supra-renal capsules of sheep was tested. There was an immediate and marked rise in blood pressure, but the pressure was not at all sustained; the fall was as rapid as the rise.

2. Strychnia sulphate caused a marked but later rise in all the pressures and the rise was well sustained.

3. Artificial respiration is of undoubted importance, and we have in our collection many records of the remarkable effect of artificial respiration on the vaso-motor and the heart action and hence upon the blood pressure. The blood is insufficiently supplied with oxygen in shock. An increased supply of oxygen is urgently demanded.

4. Intra-venous infusion of normal saline solution causes in the first instance an increase in the venous pressure in the vena cava, and, consequently, the output of the heart is at once increased, the amplitude of the strokes lengthened, the chambers being full of blood, contractions, in consequence, become more forcible and the blood pressure rises after several beats after beginning of saline flow. The peripheral venous, the vena cava, portal, peripheral cephalic and central pressures all rise together. The rise of the vena cava and peripheral venous appears first and last and after the lapse of some time the portal would rise, but rose proportionately higher than the other pressures. If a small quantity is injected, the rise will likely not be sustained. In a 10-kilo dog as much as 750 c. c. was continuously injected, and the elevated pressure was finally sustained. Injections of quantities of 50 c. c. at intervals as needed serve the purpose well. Quantities up to twice the amount of blood calculated to be in the animal have been given before the pressure was sustained. After this considerable injection the wounds everywhere began oozing and the tissues became fairly wet. Hæmorrhages that had been insignificant

recurred vigorously. Various temperatures ranging from 18° to 53° C. were employed and within a reasonable range, the effect seemed to be the same. The effect is apparently wholly mechanical. In a small dog 500 c. c. at 53° C. were injected, while the rectal temperature was being taken and found to have increased the temperature but one-fifth of a degree. Hæmorrhage, after injection of considerable saline, shows little tendency to spontaneous arrest or clotting. The combination of small and frequently repeated hypodermic injections of strychnia, together with saline injection, makes a most effectual combination. Strychnia alone causes acceleration of the heart, with shorter beats. Saline alone causes a more forcible but a long sweeping beat. The combination of both produces a more sustained effect, and a more nearly normal beat.

Small doses more frequently repeated, producing an effect similar to the steady increment of a continuously flowing stream of saline, have appeared to produce the best results.

ADHESIONS OF THE FEMALE PREPUCE.*

By C. S. Bacon, M.D.,

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In this short paper it is my purpose briefly to call your attention to the fact that the not-uncommon condition of adhesions of the prepuce in the female may have a pathological significance. I wish particularly to consider whether the treatment of the condition should be attended to in children.

While it is generally recognized that adhesions of the prepuce in the boy may lead to masturbation and also cause certain immediate nervous troubles, such as convulsions, enuresis, and perhaps, more remotely, chorea, epilepsy, etc., the rôle played by a similar condition in the girl is generally overlooked.

For the production of either immediate or remote reflex disturbances from any peripheral irritation an irritable condition of the nervous centers is necessary, as well as the presence of the afferent im-

* Read before the Chicago Gynæcological Society, January 21, 1898.

pulses proceeding from the peripheral source. If an individual possesses a stable, non-irritable nervous system he is in little danger from a source of peripheral irritation. It is well known that the reflex nervous centers of the child are much less under the control of the inhibitory impulses than those of the adult. This may sometimes explain the fact that preputial irritation may cause nervous manifestations in the boy, while in the adult they have no such effect. More often, however, the explanation of the cessation of nervous troubles, referrable to the genital irritation, is found in the fact that the adhesions disappear upon the entrance into sexual life of the adult. The central factor in the production of reflex nervous trouble is equally active in the girl as in the boy, while in the woman, owing to the unhygienic manner of living, dressing, etc., the nervous centres are not as apt to become as stable as in the male. At the same time erections, the practice of masturbation, and sexual congress do not break up the adhesions of the prepuce, as in the male organ. Hence it follows that adhesions of the female prepuce are as common a source of trouble in girls as in boys, while their evil effects are much more likely to continue into the adult life of the woman than of the man.

The mode of production of enuresis, convulsions, etc., by reflex action is unknown, *i. e.*, neither the demonstration of the tracts along which the nervous impulses pass, nor the pathological changes due to these impulses have been made, and hence there remains the doubt that attaches to all reflex manifestations that are supported only by clinical observation. The possibility of incitement to masturbation by irritation of the terminal filaments of the pudic nerve, through preputial adhesions and retained smegma concretions is of course evident, and not generally disputed, and must be made the basis of a study of the subject.

Preputial adhesions have been credited with producing two quite different kinds of effects:

(*a*) They act as an irritant and lead to masturbation and various neuroses.

(*b*) They prevent development of the glans clitoridis and lead to aneroticism.

B. Brown, in his unfortunate work "On the Curability of Various forms of Insanity, Epilepsy, Catalepsy and Hysteria," credited irritation of the clitoris with leading to the practice of masturbation, and a long train of nervous disturbances. Similar views have been held by a number of physicians in this country, who have reported cases.

Sligh, in *Med. Sent.*, Portland, Oregon, Vol. I., p. 215, reports two

cases in virgins of nineteen and twenty-six years of masturbation, headache and general malaise, cured by liberating the glans clitoridis and removing smegma. Eger, in the *Internal Mag.*, Phil., Vol. III., p. 259, reports a case of masturbation in a child of seven years, where only removal of the clitoris effected a cure. Gordon, in *Med. Age*, Detroit, 1895, p. 275, reports a case of a virgin twenty-two years old, who was cured of masturbation and hysteria by freeing the prepuce. Hassler, in *Hahnemann Month.*, p. 182, XXXIII., reports five cases of masturbation, enuresis and convulsions in girls cured by releasing adhesions of the prepuce. Grandin, in *Pædiatrics* III., p. 145, asserts that clitoridal adhesions cause masturbation, chorea minor and enuresis. B. Merrill Ricketts has made a large number of observations on the subject of masturbation in children of both sexes under ten years of age, and is convinced of the great importance of adhesions of the prepuce in certain cases. Robert Morris, in his paper in *The Am. Jour. Obstet.*, December, 1892, p. 847, says that preputial adhesions involving a large part or the whole of the glans clitoridis may cause profound disturbances, and they are among the most pronounced of the peripheral irritators. They cause desire for masturbation, which leads to neurasthenia and they are responsible for grave reflex neuroses.

The effect of preputial adhesions in preventing the development of the glans clitoridis was emphasized in the paper by Morris, which bears the striking title, "Is Evolution Trying to do Away with the Clitoris?" He finds more or less extensive adhesions in 80 per cent. of all Aryan women, and these cause, in many cases, an arrest of development of the glans. In many cases the adjacent epithelial coverings of the glans and prepuce are not distinct layers, but are irregular masses of epithelial cells. Cross sections through the glans and prepuce may show the separation into two epithelial layers only in the boundary of cavities formed by a smegma secretion. Bernhardy has recently contended that this arrested development of the glans is the cause of aneroticism. Morris had already shown that releasing the glans from the prepuce resulted in a rapid and considerable growth. Bernhardy makes this fact the basis of his treatment of the not uncommon condition of aneroticism, and reports many cures in Med. Council, 1896.

Since the appearance of Morris' paper, in 1892, I have given some attention to this subject and am convinced that adhesions exist very frequently, perhaps as frequently as stated by Morris. That these adhesions and the consequent arrest of development of the glans may be the cause of aneroticism and lack of orgasm, I believe is not

impossible, and is not to be forgotten in those cases where that condition is of such importance as to be brought to our notice. More particularly, however, have I watched for the irritating effects of preputial adhesions, and am convinced that they sometimes exist both in girls and in married and single women. This statement I can make in the full consciousness of the great possibility of deception and mistake, particularly in adult patients. As before stated, two factors are present.

(*a*) An unstable or irritable condition of the nervous centers and (*b*) an irritable condition of the terminal filaments of the pudic nerve. Hence, neurotic and not phlegmatic individuals are the ones affected. Given a neurotic woman all sources of peripheral irritation must, as far as possible be removed, and among these clitoridal irritation is important.

In small children the possibility of mistake is much less. Under the age of five years there is generally no attempt to conceal the act of masturbation; the self-deception of the patient can be eliminated, and the effect of the treatment exactly observed and controlled. Neglecting all other possible effects of clitoridal irritation except masturbation, and eliminating other possible causes of the practice, such as worms, irritation from bowel movements or urine, I have found a few cases which show that preputial adhesions resulting in clitoridal irritation are an efficient ætiological factor. To support and illustrate this statement I will report briefly two cases, both of which were sent to me by our Fellow, W. S. Christopher, who also referred the frequent practice of masturbation of the children to the irritation of preputial adhesions. The first child was about two and one-half years old, with a neurotic inheritance. For some months it had been noticed that she masturbated frequently by crossing the thighs and rubbing them together. The movements were attended with excitement and continued until the termination in an orgasm. The acts were often repeated several times a day, and were with difficulty prevented by the most constant watching. Dr. Christopher at first attributed the origin of the practice to irritation of the urine, which was somewhat scanty and contained an excess of uric acid; but, as the practice continued after the correction of the urinary fault, he concluded that the trouble arose from clitoridal irritation, due to a complete covering of the glans clitoridis by the prepuce. As the child was very nervous I was obliged to anæsthetize her in order to dissect back the prepuce from the glans. A considerably quantity of smegma was found around the base of the glans. For a week or two after the operation, while the wound was

still sore, the little patient continued to practice about the same as before, but after complete healing the practice ceased, and she has since been free from the habit and healthier than before.

The second case is quite similar to the first. The girl was only twenty-two months old. For some time she had also indulged in "thigh practice." There was no sign of irritation from the rectum or from the urine. Not a particle of the glans was to be seen. The separation of the prepuce was also made, under ether narcosis, and revealed a considerable quantity of smegma, about as much as is normally found back of the corona glandis in the male. Her cure was also rapid and complete after disappearance of the first post-operative soreness.

It is difficult to form an idea of the frequency of such cases among young girls. They are rarely observed by mothers, and when observed are rarely reported to the physician, and when reported they are very often quite ignored by the physician. I believe that the six or eight cases that I have seen in very young girls form but a small proportion of those that exist in my clientele. I also believe that clitoridal irritation is at least quite as common a cause of masturbation as any other.

Hence the question is very pertinent, Why not remove this source of irritation which may lead to trouble in the infant and cause serious results later in life, by freeing the clitoris in all cases shortly after birth? It is becoming the general rule for the obstetrician to release the prepuce from the glans in the male immediately after birth, or, according to my routine practice, after the separation of the navel. The same reasons exist for adopting a similar procedure in the girl, only they have perhaps more force. The adhesions are perhaps less resistant than after months or year of delay. The child suffers less pain from the operation, and an anæsthetic will never be needed. The soreness following the operation will not be made worse by the running around of the child. More exact attention can be given to the after-dressing which will prevent the reformation of adhesions, and lastly, the immediate attention is an effort to prevent disease, which is always better than to cure it.

Hence I would suggest that in the careful examination of the newborn child the prepuce of the clitoris should not be overlooked any more than the foreskin of the penis of the male. If, as generally happens, in both cases, adhesions are found they should be broken up after the navel separates, and care should be given that they do not reform. Mothers should be informed of the possibility of the formation of the habit of masturbation, even in the young child in order

that she may carefully observe the child and give timely notice of the beginning of the practice. Then the clitoris should be observed, together with other possible sources of irritation.

A NEW PERINÆORRHAPHY AND POSTERIOR COLPORRHAPHY.*

By Frank T. Andrews, A.M., M.D.

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Before discussing this operation it will not be out of place to survey the field and to note briefly the extent of the injury we wish to repair, and the indications to be met in order to restore the integrity of the parts. And first I ask you to call up before your mind's eye the image of the pelvic floor and the elements that give it strength. Remember the deep fascia and triangular ligament anteriorly, but particularly the form, attachments and supporting value of that triple layer, the recto-vesical fascia re-enforced by the levator ani muscle and anal fascia. Remember, also, the inefficiency of skin, fat, mucous membrane and serous membrane as supporting elements. Recall the positions of the soft hollow viscera, rectum, vagina and bladder, with outlets through the pelvic floor, as they lie overlapping one another, forming a soft, easy bed for the uterus and its appendages, and receiving from above the intra-abdominal pressure.

And last of all, remember the fact that the levator ani muscle and its fascias are intimately connected with, and give off fibers to the rectum and vagina as these canals pass through the pelvic floor. With the anatomical elements and the mechanism of support in mind, consider for a moment the effect upon these structures of labor and the passage of the child's head. What a tremendous stretching of fibers as the whole pelvic floor is crowded downward and the vaginal orifice is dilated by the advancing head! And the tissues never entirely recover from this injury. Resilient as these parts are, no matter how well conducted the convalescence the vaginal orifice remains larger

* Inaugural Thesis read before the Chicago Gynæcological Society, January 21, 1898.

than before and the projection of the pelvic floor greater. But if the recto-vesical fascia and levator ani stretched to their utmost finally yield, not only producing perinæal laceration but separation of fibres of the levator ani and fascia elsewhere in the pelvic floor, the ultimate result is still greater pelvic floor projection and a constant tendency for the intra-abdominal pressure to force the pelvic contents through the enlarged vaginal outlet, producing prolapse, retroversion, rectocele and cystocele.

In a complete consideration of this subject we would have also to deal with other causative elements of that condition of relaxation that we call subinvolution, viz.: œdema, congestion and inflammation.

I have called your attention to the mechanism of support and the traumatism which it suffers during pregnancy and labor, that we might have clearly before us the indications to be met by operation. The ideal treatment would restore the parts to normal condition and position. The pelvic floor should be lifted to its original level and made to regain its lost tone and resiliency. All the muscular and fascial elements about the recto-vaginal opening through the floor should be reunited. The stretched and distorted walls of the rectum, vagina and bladder, should be restored to normal so that the uterus might again rest safely and comfortably upon rectum and bladder. This ideal repair we have not yet accomplished. When we do attain to the ideal we will be able to discard various auxiliary operative procedures, such as Alexander's operation and ventral fixation, and stand squarely by the results of our work on the pelvic floor. We have come, then, to recognize the fact that a perinæorrhaphy, though absolutely indispensable to a cure, may still fail to correct a large part of the deformity, and must, in that event, be supplemented by other means of support. The investigation of further methods of approaching the ideal repair is a fair field for work.

And now, with a definite idea of the indications for the operation and its limitations, I will describe a new method of doing it, claiming only that it is a rapid and nearly bloodless method, and that while it makes as good a perinæum as any of the older operations, it makes a better and longer posterior vaginal wall.

The operation is as follows: The anæsthetized patient is put in the lithotomy position, the labia separated, and the sides of the vaginal orifice retracted with sharp hooks at or above the lower myrtiform caruncles. These hooks, when brought together, mark the upper external angle of the new perinæum. It is desirable that they be placed as high as may be, consistently, with leaving a proper vaginal orifice,

for by this means the anterior vaginal wall and the bladder will be best supported. The retracting hooks being held by an assistant, so that the

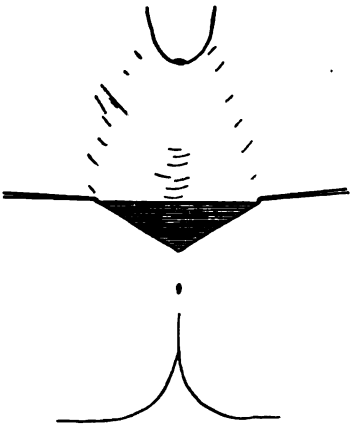


FIG. 1—Extended triangle denuded.

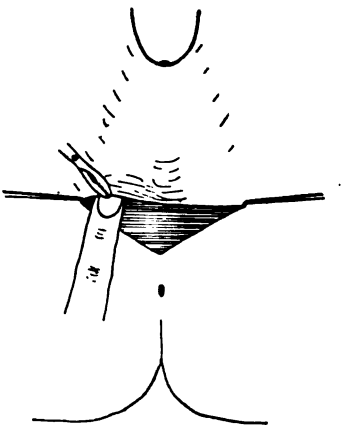


FIG. 2—Finger tip introduced under mucous membrane of posterior vaginal wall.

tissues between them are tense, make an incision through the membrane extending from hook to hook. With this incision as a base line, denude an external triangle with its apex at a selected point an-

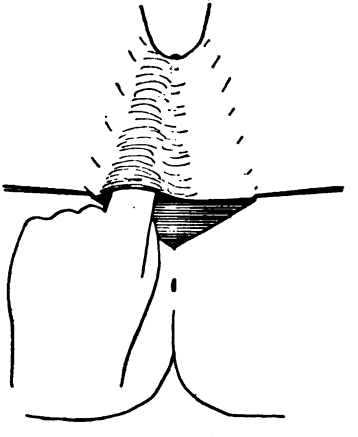


FIG. 3—Finger pushed up to cervix, making a tunnel under mucous membrane.

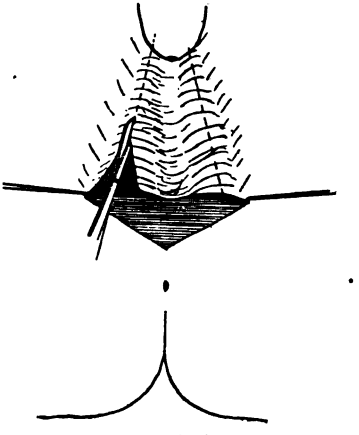


FIG. 4—Both tunnels formed. Incision of mucous membrane from vulva to cervix in dotted line.

terior to the anus. This point is determined by the amount of perinæal laceration.

Up to this stage the operation presents no new feature, but I think

that the next step, whatever its merit, at least by its novelty, justifies the title of this paper.

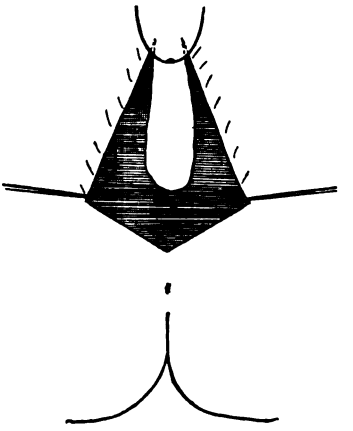


FIG. 5—Retraction of mucous membrane leaves denuded surface. Tongue of mucous membrane is attached by its centre line to the crest of the rectocele.

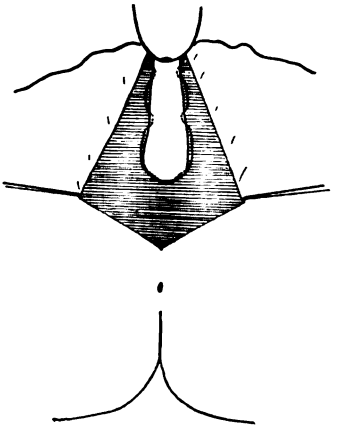


FIG. 6—Crown stitch passed around the mucous membrane tongue.

The cut edge of vaginal mucous membrane forming the base of the denuded triangle is now seized three-quarters of an inch to the left of the raphé with forceps, and raised, so that the tip of the index finger can

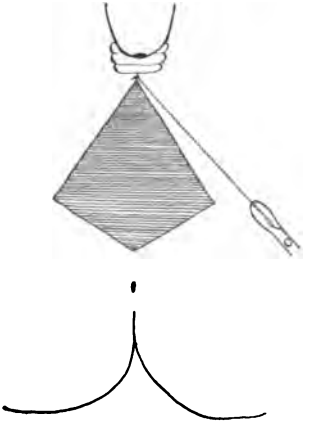


FIG. 7—Crown stitch tied. One thread from the knot left long, to be used as a guide in removing stitch.

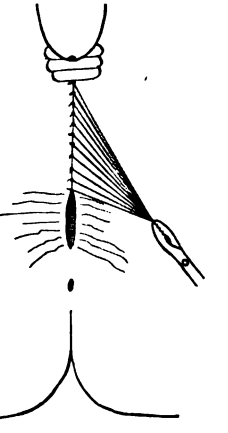


FIG. 8—Vaginal stitches all tied. Skin stitches passed but not tied.

be introduced beneath it. To do this it is sometimes necessary to clip with scissors some bands of cicatricial submucous tissue at the edge

of the membrane. The index finger is now easily pushed upward beneath the mucous membrane of the posterior vaginal wall until the tip of the finger is beneath and behind the cervix uteri, and separated from it by mucous membrane.

It is desirable that the deep end of the tunnel thus formed should be narrow, but the external portion may be increased in calibre by a lateral movement of the finger, as much as desired.

Repeating this procedure on the opposite side of the median line, it will readily be seen that the vaginal mucous membrane has been lifted from the recto-vaginal septum, but has retained its attachment throughout the median line along the crest of the rectocele. Through out this procedure it is imperative that the tip of the finger be kept close to the middle line. Neglect of this precaution will result in stripping mucous membrane from the lateral, or even from the anterior wall of the vagina.

Selecting a pair of straight scissors, cut the lifted mucous membrane of the posterior vaginal wall on the right side, from vulva to cervix. This is best done by using the finger in the artificial canal as a guide for the scissors, and cutting the mucous membrane throughout the entire length of the canal. There is considerable opportunity for discretion on the part of the operator in determining the exact line of incision, but in general, it may be said that it will extend from a point near the lower myrtiform caruncle to a point a quarter or a third of an inch from the middle line, beneath and behind the cervix uteri. Repeat this operation on the left side.

A feature of the operation which doubtless has attracted your attention is the fact that these two incisions, so widely separated at the vulva, approach so near to one another under the cervix, and that the vaginal mucous membrane between the lines of incision is a triangle with its base at the vulva and its incomplete apex under the cervix. Remember, also, that this triangle is attached from base to apex along the median line of the vagina. The disposition to be made of this piece of mucous membrane, with its attachment to the rectocele is the principal feature of the operation.

Notice further, that although the area of mucous membrane between the lines to be incised is triangular, its shape changes instantly when the incisions have actually been made. This is due to the natural retraction which takes place in the membrane. Its appearance now is that of a tongue of mucous membrane upon the rectocele. The tissues at the side of the vagina have also retracted. The shrinkage of the tissues leaves the floor of the vagina denuded in two triangles

separated by the tongue of mucous membrane. The incisions cut a small branch of the vaginal artery on each side, about an inch and a quarter from the vulva. The slight bleeding is controlled by forceps applied for a few moments, without ligature.

The parts are now ready for the sewing. In the passage and tying of the first stitch will be found the essence of the operation.

The procedures just described were devised as the quickest and best way of preparing the parts for this crown stitch, which will be so passed as to surround the tongue of mucous membrane and draw it up under the cervix in folds, thus straightening the anterior rectal wall. It is done as follows:

Select a stout needle, short enough to be easily turned in the vagina. Cause it to enter the mucous membrane of the left side of the vaginal fornix, beside and behind the cervix, *i. e.*, just beyond the inner end of the long incision on the left side, and beside the base of the mucous membrane tongue. Let the needle go deeply into the submucous tissue, and bring it out in the denuded surface, near the cervix. Now let the needle pass around the tongue, catching up the mucous membrane at several points so that the thread will surround it like a purse string. Bring the needle out on the right side at a point corresponding to the point of entry on the left.

Traction exerted on both ends of this stitch will cause the mucous membrane tongue to be folded up in a wrinkled mass under the cervix. Tie the stitch so that the knot lies in front of the mass. If the tension on the rectum is too great, a few fibers under the tip of the tongue may be clipped with scissors. The anterior rectal wall is now straight. The rectocele has disappeared, and is no longer a factor in the case. The remaining denuded surface now has the form of a triangle, and is to be closed in the usual way. As the closure is effected, stitch by stitch, the cervix is forced further and further upward and backward by the increased resiliency of the pelvic floor and the reduction in its projection, while the same factors support the anterior vaginal wall.

I am in the habit of tying each stitch as soon as passed, and of cutting off the left hand end close to the knot, leaving the right hand end long, as a guide to the knot to facilitate its removal.

In from two to three weeks I remove the stitches with my stitch cutter, as demonstrated at your last meeting.* The guiding strand

* This instrument appeared and was fully described on page 232, February number, 1898, of this JOURNAL.—[Editor.]

of silkworm-gut is placed in the small hook near the jaws of the instrument. The instrument slides down upon the knot, cuts and removes it.

In placing the wrinkled mass of tissue under the cervix, it was not the intention that this should constitute the uterine support. Nevertheless, it does offer considerable temporary support to the cervix and to whatever extent it does this it is of value.

The real value of the operation is in the fact that by this method the denudation is made quickly, easily, and almost bloodlessly, and that then, with one stitch, the rectocele is obliterated, and the denuded surface brought into proper position for closure.

The support offered by the folded mass under the cervix is transient, the tissue shrinks or is absorbed, and at the end of three to four weeks it has lost three-quarters of its bulk and all of its wrinkles, so that its surface is a smooth dome. In another month or two it is not to be found. The vaginal mucous membrane is smooth and level over the spot, as is also the rectal mucous membrane of its under surface.

As the prime feature in this operation is the obliteration of the rectocele, it is self-evident that it is not applicable to cases in which no rectocele exists, namely, slight lacerations of the perinæum on the one hand, and complete tears through the sphincter ani on the other.

The after-treatment is the same as follows any perinæal operation. The bladder and rectum should be kept empty and the wound kept sterile.

Immediately after the operation I use sterilized boric acid freely, placing about an ounce in the vagina and another ounce in the dressing over the vulva and perinæum.

The steps of the operation may be summed up as follows:

1. The labia are separated and sharp retracting hooks on the myrtiform caruncles expose the field of operation.

2. An external triangle is denuded on the skin surface, as in Emmet's operation.

3. Keeping to the left of the median line, the finger is then passed upward under the mucous membrane of the posterior vaginal wall to a point beneath the cervix.

4. Repeating this on the right side, we have two parallel sinuses extending the whole length of the recto-vaginal septum.

5. The mucous membrane is now cut with scissors, from vulva to cervix, over each new sinus. This leaves a tongue of mucous membrane attached to the middle line of the vagina.

6. Secure the small spurting artery in each incision with forceps.

7. The first stitch is so passed as to surround this tongue and draw it back under the cervix.

8. The remaining stitches are easily passed, as in the repair of a recent laceration.

The results have been thoroughly satisfactory. I have done this operation on more than fifty patients with uniformly good results, as far as I have been able to follow the cases. In some cases supplemental operations were made at the same time, as anterior colporrhaphy and suspensio uteri.

THE TREATMENT OF RETROPOSITIONS OF UTERI IN WOMEN WHO MAY BECOME PREGNANT.*

By J. R. Nilsen, M.D., New York.

I was requested to take the non-surgical treatment for the subject of my paper. I should perhaps not myself have chosen it for a single paper to occupy the customary time for reading, but being told that several short papers would follow it, I fully appreciated the more attractive arrangement of the evening's programme, suspecting somehow that many of the members would not be in very warm sympathy with my views. Since the time is limited, I will not go into many details of treatment, but deal more with general principles, and, in order not to give the members too good cause for complaining that the paper contains nothing new, let its purpose be to help to answer the question: "How will the Obstetrical Society at this time instruct the average general practitioner and gynæcologist in regard to the subject?"

It is well that these old themes, even though threadbare to many, should come before us now and then, that by comparing notes, we may get a true estimate of present advancement, if there be any.

Retropositions of the uterus appear in an infinite number of degrees of reducibility and curability, from those easily, promptly and completely restored to the absolutely irreducible, to even the smallest degree.

The easily-reducible cases we may readily cure by simple means, anatomically and symptomatically, without taking the grave respon-

* Read before the New York Obstetrical Society, January 11, 1898.

sibility of teaching those entering upon the gynæcological field that operative measures hold out the greater promise.

The glamor of brilliant surgical achievements, as reported through our journals, have spurred on an army of physicians in all parts of our country toward the hasty attainment of surgical knowledge, by them imagined to be absolutely indispensable, with the result that an amount of gynæcological operative work, unnecessary and poorly done, simply appalling in its extent must be manifest to any one not blind. In my capacity as teacher, I come in contact with a considerable number of physicians in general practice. A large number of these are looking for instructions which shall teach them, as quickly as possible, how to do the operations they read about, and this enables me to appreciate more fully what I had learned to regard as a fact, that operations up in the thousands, are being done all around us by poorly-equipped men—and women to be sure—upon organs of whose gross anatomy even they have but a nebulous knowledge. The result is that a still larger army of suffering patients go about with manifold ills as the direct results of operations, with the addition of non-cure of original troubles. I am not talking at random, I am reporting what I have seen and allude now particularly to unskillful operations for retrodisplacements.

I must not be misunderstood. I am surely not one to presume to say to any of my brethren: "You operate too much." I could not express opinions concerning patients whom I perhaps never saw. If a woman prefers operation to any kind of treatment and the operator sincerely believes his operation to be for her greater good than any slower method, why—I say, settle that between your patient and yourself, and if you be not an expert and the patient be agreeable to the experiment, again that lies between you two. However, confining myself now to reducible retropositions, I would be the first one to affix my name to this maxim, to go out from our society: Judicious treatment by the average physician and gynæcologist would be for the far greater good to womankind than surgical measures resorted to by the average operator of these times. Retrodisplacements, even reducible, in nullipara who are otherwise perfectly well; in other words, retrodisplacements giving no symptoms, have never come my way that I remember. The lesion may occur suddenly, as a primary condition, from various accidents, and then, as a rule gives acute symptoms; but, as I have seen the cases, the lesion has generally been one of the expressions of an existing more extended trouble, a link of a faulty chain. The position, *per se*, may be only as a stone in an arch,

and not always the keystone either; hence many of the ultimate failures where position alone has received attention. Such failures are often shown after the operation called Alexander's. Operators have established the rule for this operation, that it is decidedly contraindicated where there are diseased appendages or adhesions. Failures often do result because these contraindications have actually existed, but not been appreciated. An expert, even a keen one, will sometimes have difficulty in determining whether these organs are perfectly healthy; take, for example, in a woman with well-developed muscles and much fat, and a deep vagina. How much more difficult then for the non-experts, too many of whom, alas, operate!

Retropositions are least common among the young unmarried, but may exist, even at birth, we are told, though this is undoubtedly rare. Abortions and childbearing, with their frequent sequelæ, are the commonest causes. Injuries to perinæum and cervix are very active agents and point to probable septicæmia where the uterus is more or less fixed. A very common sequence is: Cervical lacerations, puerperal infection, subinvolution, descent, retroversion, flexion and adhesions. Gonorrhœal infection must not be forgotten. Adhesions caused by gonorrhœal inflammation are apt to be particularly unyielding. Irrespective of these causes the lesion may be preceded and accompanied by general laxation from systemic causes. Some of the patients are very flabby, anæmic, with marked general muscular relaxation. Very likely you may have cured or seen cured a marked retroversion in some young woman, by hygienic measures, by baths, skin-friction, general massage and exercise, special postures during sleep, etc., etc., and without any local treatment. I have, and a logical deduction therefrom to me is (and I think can be demonstrated) that diseases of almost any organ in the human economy may, by their extending influences, bring about such a systemic condition, with relaxation of all the pelvic tissues, that the uterus will, upon very slight provocation, fall backward. Of course, sudden force may, and does produce the lesion, but my own experiences shape the rule that when I encounter this lesion in one who dates the special symptoms from some accident, I generally also find a more or less marked deviation from the normal in the patient's past history.

In a recently published text-book I read that we occasionally meet with retrodisplacement in women without any symptoms referable to this lesion. "Such cases require no treatment," is is said. This I call dangerous teaching and poor advice. I may ask, How did such patients come to be examined per vaginam if they had no symptoms

referable to this lesion? Surely one would not make a vaginal examination for eczema of the scalp, and I cannot think of a single symptom referable to the pelvic cavity that may not come from or be closely associated with retrodisplacement, if this exist. Not long ago I heard one of our young brethren declare, with much warmth, that he had seen more than one young, perfectly healthy and vigorous woman, in whom he found marked retroversion with never a symptom.

It reminded me of the young medical man who was called in haste to the scene of an accident. A young woman had fallen over a precipice. Her lady friends, looking down from above, thought her dead. The young Æsculapius succeeded, by climbing, in reaching the spot where she lay. He found she was still alive, for he discovered pulsation in her femoral artery.

My advice is, never neglect this lesion, for reasons which I will touch upon later on.

As for treatment, in some of the easily reducible cases, with marked general signs of relaxation, the most important part of the treatment may be systemic.

Gynæcologists are, now and then, called narrow. Specialists, in any branch of science, are often called so. Before resenting the accusation let us first make very sure that it is unfounded.

Specialisms are prone to foster narrowness, and gynæcologists may not be exempt from temptation. Let us only resist it and be broad in our work.

Just now I have under treatment an unmarried lady of about thirty-five, who came with a marked retroversion, reducible. She was excessively flabby, neurasthenic, hysterical, with palpitation, cardiac anæmic murmurs. She has been much treated in her life. Her last doctor sent her to me. I did not take for granted that the retroversion, marked though it was, was the cause of all these disturbances, but rather was itself one of the links in a vicious chain. What has been the outcome of my study of the case? I came finally to the diagnosis of marked neurasthenia (with manifold symptoms, among which marked retroversion) due probably to—eye-strain. Examination of her eyes by an expert revealed a high degree of mixed astigmatism. Glasses were promptly procured. Only a few months have passed, but the change is already remarkable. The uterus responded readily, and there you are—retroversion from astigmatism!

But why!—should we gynæcologists go to the extent of instituting a general detailed physical examination of our patients? Yes, certainly, as far as reasonable, and without fail in such cases as the one quoted,

that we may be enabled to give the wisest possible expert opinion, which in many instances is this: Your pelvic organs are only indirectly concerned in your general condition.

In the large majority of cases, however, we place our chief reliance upon direct local means, the chief of which is the pessary. Besides this, various agents applied to the vaginal vault by tampons, prolonged douches, massage, postures, curettage, etc., etc. Repair of injuries in the parturient canal should always be urged.

The reposition should be bimanual in preference to any other method where it is possible, and, as one's skill increases, other methods will be more and more rarely resorted to. These other methods are, by the aid of repositors, intra- and extra-uterine and in various positions, and also by the sound. I have much to say against the sound in the hands of, not so much the clumsy as the illogical and dirty manipulator, and therefore I teach the other methods to begin with, but I myself use a large sound altogether where the bimanual reposition is not attainable. In my operating-table I have made a socket in which I continually change the curve or curves of the sound and carefully disinfect it before using, of course. I am willing to admit that the safe and effective handling of the sound is the outcome of many years' careful observations, but I never use it for sounding—it is my elevator, and that only.

There are those who regard him who has not advanced beyond actually praising the pessary, with a feeling almost akin to pity. I am emboldened to say that the opposition to the pessary on the part of many of them may be, and often enough is, due to the fact that they have never mastered it. I have heard men say that they do a good deal of gynæcology but have gone back on the pessary, men who at once proceeded, unwittingly, to prove that they themselves never even had a clear idea through what process they expected the instrument to accomplish the hoped-for results. They almost seem to have looked upon the little thing as simply a vehicle in which its inventor's spirit, be it that of Sims or Emmet or Thomas, transmigrated into the patient's vagina, there, in some mysterious, to them unknown manner to do the spirit's bidding; a sort of Aladdin performance: "Grease me and I'll do the rest." And then, if the pessary did something not in the contract with the patient, they would say: "Those men were not so great on the pessary question after all. It is no good. Come, let us go down to New York and take a three-weeks course in gynæcology and then return home and operate." Thus each of us has a mission to fulfill, for hither they come.

As soon as the pelvic tissues have been prepared and the uterus brought well forward, the pessary is placed. Be sure to make the first pessary long enough, with very slight curve. In fact, where the reposition has been at all resisted and thereby suggesting the possibility of the uterus falling backward again, I make the first pessary straight or almost so, except at the lower end, which is always more or less curved. Then, should the uterus fall backward, the posterior bar of the pessary will not receive it in a manner to cause or increase a flexure. I work from the straight toward the curved, never from the sharply-curved, shop-pessary, down to the straight, and many is the case in which the latter alone has done all I desired it to do, from the beginning. I know of few things giving greater scope for ingenuity, aided by sound reasoning, than the use of the pessary, and it is not a little remarkable how slight an alteration in a pessary curve will have a decided effect upon the uterus and be noticed by the patient. The introduction should never be painful. She should be instructed to remove it at once should the wearing of it give pain. Much rather none than a faulty one. Daily injection for a few minutes with lukewarm salt water with a hand-bulb syringe will keep the pessary clean. This syringe is better than a fountain for this purpose. It gives more force to a number of small, cutting streams.

The behavior of the uterus will, after very few days, indicate pretty accurately the ultimate result. That which most commonly retards the complete reposition and demands many changes in the pessary is the resistance offered, due to adhesions, and flexures. Massage is here of greatest value. If sterility be under consideration let the rule be that the more marked the resistance, through the extent of the adhesions, the less bright grows the hope of cure, for this condition points to the implication of the tubes which are almost always the first to suffer.

Among those who refused operation I have handled a number in whom I have been surprised at the completeness of the final reposition and retention where the case gave but little or no promise in the beginning. On the other hand, I have been able to accomplish very little, beyond lessening congestion, in cases which at first promised much by the existing degree of mobility. The difference finds its explanation in the remoteness of date and intensity of inflammation which caused the adhesions.

The remedial agents employed have been chiefly prolonged hot douches, glycerites and glyceroles, curettage and lifting upon large intra-uterine sound, aided, as soon as possible, by massage.

But in a very large number of cases the retrodisplacement cannot

be overcome. If this becomes manifest the patient should be made to clearly understand that, although symptoms may be controlled more or less completely, yet the condition demands very systematic watching and care for ever afterward. As soon as the patient feels pretty well she will be almost sure not to appear as often as she should to be looked after. Do not commit the error of saying or teaching that if there are no longer symptoms no treatment or care is needed. Let her take all the responsibility of no care or palliative treatment. State the case fairly. Be willing to treat her if she absolutely refuses operation. Much may be done to render her comfortable, but if there be persistent congestation, indicating that the organs may be overfed through organized adhesions, urge operation or shift the responsibility to her own shoulders. Keep well in mind that pernicious cell-activity may go on without the patient being aware of any change, and at length nothing but a very slight metrorrhagia or increase of the menstrual flow may be the only external evidence, though not suspected, of an already-established malignant infiltration.

Nothing, since the time I began gynæcological work, stirs me more profoundly than seeing patients return to me many months after my urgent advice for operation, to find now, no longer simply a fixed uterus, but a far-advanced carcinoma. Quite a number of such sad experiences have fallen to my lot, only little brightened by the fact that the delay was entirely against my advice.

To avert that sad end operate in these cases, if you have gone through your apprenticeship in special surgery and graduated decently. If you have not, seek your friend, the expert.

The incurable patients who refuse operations find comfort in the straight pessaries or tampons. The former should be watched. Tampons may be managed by the patient herself, and the best way is for her to load a short cylindrical speculum with the tampon properly made, lubricate and introduce the speculum, with some blunt object force the tampon out of the speculum as far backward as possible and then remove the latter, the tampon string hanging out. To avoid the friction of the cotton in the removal, repeat the process in reverse order, beginning with dropping the string into the smaller end of the speculum. But let me repeat it, do not take any responsibility in these cases. Delay may be dangerous.

The method of operating must be based upon the needs of each individual case and framed as the work proceeds step by step after the abdomen has been opened, the aim being to make the result as nearly anatomically normal as possible. With this in view it has happened

to me in perhaps ten or twelve cases that I have not seen the need of doing anything beyond separating adhesions with minutest care and finishing with pessary treatment for a short period.

In another set of cases where the appendages were hopelessly destroyed and had to be removed, I have found that the shortening of the broad ligament by the pedicle ligature or the continuous, puckering suture was quite sufficient for holding the uterus in a normal position, still even in these cases I am fond of slipping in a narrow pessary to lift backward the cervix for a short time.

In conclusion, let me say that the chief reason why I so strenuously urge against teaching Alexander's operation to non-experts is that already in their hands there are too many failures. Even in the hands of the keenest experts there seem to be occasional mishaps and failures. In addition to these, new lesions are often created by the non-expert, the most frequent of which is undoubtedly hernia. About two years ago I began to form a table of mishaps and failures after this operation. I had already tabulated many, when the work was dropped. Since I was asked to write this paper I have made inquiry of one surgeon only, namely, Dr. De Garmo, who operates on hernia only. To my question he answered: "The number of hernias directly resulting from Alexander's operation, and on which I have operated, is a few over fifty," and he added: "If one was anxious to make a hernia, Alexander's operation would be about the most direct road to it, judging from what I have seen." A short time before that I asked of Dr. Coley whether he had seen hernias caused by Alexander's operation. His reply was: "I have five such cases under my care now." These are the only surgeons of whom I have inquired recently. I have myself seen many failures and a few hernias.

To repeat, finally, and always speaking in reference to reducible retroversions, I believe that judicious treatment, founded upon scientific principles will offer far better results to the average gynæcologist and general practitioner than will operations, with the avoidance of mishaps and consequent new lesions.

EMPHYSEMA OF THE ABDOMINAL WALL AFTER LAPAROTOMY.*

By Weller Van Hook, A. B., M.D.,

Professor of Surgery in Northwestern University Medical School, Chicago.

The fortunate rarity of emphysema of the abdominal wall after laparotomy and the renewed interest in the subject manifested in certain European clinics seem to justify calling your attention briefly to the following case:

Anna W., aged thirty-three, *puella publica*, upon admission to the Cook County Hospital, said her present trouble began about one month before with severe pain over the entire abdomen, gradually becoming localized in the left inguinal region, where the patient said that so much pain existed as to prevent her from sleeping. Up to within one week she had pain during defæcation, regardless of the character of the stool. During the week after admission the general condition was poor. A vaginal discharge had existed for some time. The patient said she had a similar attack five years ago, lasting seven months, and another two years ago lasting two months.

Bimanual examination readily disclosed the existence of a left-sided sactosalpinx, which was thought to be due to gonorrhœa.

On October 17, 1897, at the request of the attending surgeon, Dr. T. A. Davis, who was indisposed, and whom I wish to thank for the privilege of reporting the case, I operated on the woman with the efficient aid of several members of the house staff. In the Trendelenburg posture we removed, through a median abdominal incision, the enlarged tube, without special technical difficulty, and divided some adhesions about the right ovary and tube.

The house surgeon, a very conscientious worker, made the "toilette of peritonæum," and sutured the abdominal wall after I had left the operating-room.

* Read before the Chicago Gynæcological Society, January 21, 1898.

He closed the wound by figure-of-eight silkworm-gut sutures, which included the skin in the outer loop, the deeper layers in the inner loop. These sutures were inserted and tied before the patient was lowered from the Trendelenburg position.

The course of wound-healing was aseptic. But on the morning following the operation the patient, who had surreptitiously slipped her hand under the abdominal dressing, noticed a slight crackling under the skin. The house surgeon found the crepitation noted by the patient, and determined the fact that the air could be pushed about beneath the skin on both sides of the wound from Poupart's ligaments upward as far as the umbilicus.

The quantity of air progressively diminished, but did not wholly disappear for about five weeks.

The cause of sub-cutaneous emphysema, after laparotomy, has given rise to some discussion in the German societies and journals since 1894.

Meinert addressed the Gynælogical Society of Dresden upon the subject, and called attention to the fact that, in his own case, and in eight other cases, from the literature, the Trendelenburg position had been used.

Leopold, at the same meeting, reported six cases, some of which had been operated upon in pelvic elevation.

Madlener (*Münch. Med. Woch.*, 1894, No. 24), considers the Trendelenburg posture responsible for the accident, insomuch as a greater quantity of air collects in the abdomen during the operation. He does not tie the abdominal sutures until the patient is replaced in the horizontal posture, although he inserts the stitches before making that change.

Graefe (*Muenchener Med. Woch.*, No. 42), could not agree with Madlener that the mere change of position would force the air out of the abdomen, so that after inserting the sutures he has an assistant express the air with both hands while the stitches are tied.

Heil (whose references to the antecedent journal articles I have used) relates a case of this kind in the *Arch. f. Gyn.*, 1896, 52 Bd., H. 3, in which the Trendelenburg posture was not used, and in which, nevertheless, emphysema occurred. He, therefore, argues that the Trendelenburg posture is a factor of minor importance in the causation of the condition.

Heil's paper is enriched by the report of a series of experiments on rabbits, in which the abdomen was opened, air admitted and the abdominal walls then closed. When the abdominal walls were sutured

in layers but the innermost structures were brought together loosely, while the skin was tightly closed, emphysema of the abdominal wall occurred very easily even when the Trendelenburg posture was not used. The mechanism of the occurrence of the accident seems thus to be clearly elucidated.

That this was the explanation of the accident in the case I report seems evident, since figure-of-eight sutures were used, embracing the skin in the outer loop, the deeper layers in the inner loop. We can easily imagine that slight gaps existed in the spaces between sutures through which air escaped into the subcutaneous space. Since the skin was in view during the application of the sutures it would naturally be the subject of care on the part of the operator so that it would be accurately enough approximated to prevent the escape of the air outside the abdomen.

Heil's tendency, in discussing the mechanism of this accident, seems to be to minimize the importance of the Trendelenburg posture. It seems to me we must not forget that this posture is adopted largely in order to displace the intestines from the pelvis by means of the air; that in its use we intentionally introduce a quantity of air into the abdomen greater than would be the case in laparotomy in the horizontal posture. And we must not forget that the larger the quantity of air left in the abdomen the greater will be the intra-abdominal pressure and the greater will be the tendency of vomiting or coughing to force the air through the imperfectly-closed abdominal walls.

The factor of sudden and violent augmentation of intra-abdominal pressure has been to a considerable extent neglected in the consideration of the ætiology of this form of surgical emphysema by my predecessors in this study. Coughing or vomiting by causing violent contractions of the diaphragm and corresponding momentary increase of the intra-abdominal pressure must be one of the essential causes of the accident, since some force is necessary in order to drive the air into the confined space between the muscles and skin of the abdominal wall. In the case I report vomiting occurred often enough and violently enough to supply this ætiological factor.

There are several points of interest in this case, the first of which is the extent of the distribution of the air. At first felt on the left side of the incision, and extending upward to the level of the umbilicus, it was soon found to be present on the right side of the median line. On both sides it could be pressed down to Poupart's ligaments.

Another point which is more difficult to explain is the length of time during which the air could be felt. My own examinations easily

proved the existence of a residuum of air in the tissues five weeks (thirty-five days) after the operation. The patient, who had become very expert in detecting the location of the air by palpation, stated six weeks after the operation, that she could still feel it. The usual time of disappearance of the crepitation is twelve to fourteen days.

The air in this instance did no harm at all, as is indeed usually the case.

No other difficulty is likely to be experienced in such cases than a diagnostic one. The surgeon may momentarily fear gaseous gangrene or he may think he has punctured an intestine. Neither of these things can be difficult to exclude on careful study, since their attendant grave symptoms contrast strongly with the simple course of air extravasation.

The most important practical lesson is to close all the layers of the abdominal wall, wherever practicable, by three or more layers of carefully-applied sutures.

103 State Street.

SOME OF THE DISADVANTAGES OF VAGINAL DRAINAGE FOR PELVIC ABSCESS.*

By Charles P. Noble, M.D.,

Surgeon-in-Chief, Kensington Hospital for Women, Philadelphia.

The advantages of vaginal incision and drainage in the treatment of certain classes of pelvic abscess have been presented to the Society from time to time. My own experience has been such that I have warmly advocated this method of treatment as against the radical abdominal operation; at the same time, it has seemed to me necessary to insist that the method is applicable only to a restricted class of cases (large or complicated pelvic abscesses, especially in acutely sick and in feeble patients), and that most cases of suppuration in the pelvis, perhaps 90 per cent., are best treated by abdominal section and the removal of the abscess sacs.

Certain disadvantages are inherent in the method of vaginal incision and drainage, and some of my own experiences from this stand-

* Read before the Philadelphia Obstetrical Society, January 6, 1898.

point are the subject of this communication. Every operator of experience knows that it is impossible in every case to arrive at an exact diagnosis of morbid conditions in the female pelvis, hence in employing vaginal incision it is found, from time to time, that the case is not a suitable one for this method of treatment, and consequently the operation is fruitless. In other cases, when the diagnosis of pus in the pelvis is correct, the pus may not be reached because it is accessible with difficulty from below. The difficulties may easily be such as to make it appear the more prudent course to abandon the effort at drainage from below, and to resort subsequently to abdominal operation. In my own somewhat limited experience with vaginal drainage, these two classes of cases cover the disadvantages which have been recognized.

The case of Mrs. L. is a typical one of a fruitless operation because of a mistaken diagnosis. Mrs. L. had been subjected to six abdominal sections before coming under my care. At various times her vermiform appendix, her ovaries, and her uterus, had been removed; and she had had operations for adhesions, and, according to her statement, for the removal of a gauze pad. She was apparently suffering from a localized peritonitis, with a temperature of 103° F. On examination, a mass was felt in the left half of the pelvis. It was supposed that this was an abscess about the pedicle ligatures. Desiring that she should not need further operative treatment after leaving my hands, I did not care to do an abdominal operation under the circumstances. Operations done in the course of an abscess with an acute peritonitis belong to the group of operations in which drainage is sometimes necessary. This patient, having had five incisions in or about the linea alba, had a scar at least an inch wide. I desired to excise this and leave her with an intact abdominal wall, consequently it seemed best to drain the case by the vagina, with the purpose of putting off the abdominal operation until she had recovered from the recent inflammatory attack. Subsequent events showed that the apparent history was a mistake, and the probabilities are that she was a hysterical maligner, who in some way made the thermometer register 103° F., although she had little if any fever. On making an incision into the left broad ligament, no pus was found, and exploring the broad ligament thoroughly with the finger it was quite evident that the diagnosis of abscess was a mistake. The folds of the broad ligament were separated almost to the upper border, when the absence of infiltration made it certain that an abscess was not present, and that the mass was of some other character. Some time subsequently the abdomen was opened, and the mass was found to be a small cyst in the broad ligament, presumably of inflammatory origin.

The patient made a good recovery. In this case the vaginal incision did no harm and no good.

I was called in consultation to see a patient operated upon by another surgeon, for my advice as to the best method of treating a large mass of exudate which had formed in the pelvis subsequent to an operation for the removal of the right ovary and tube, and the attachment of the uterus to the abdominal wall. The patient had a history of continuous fever, and was evidently somewhat septic, which history, in connection with the extensive exudate present, made it probable that an abscess had formed about the pedicle ligature. It was thought wise to make an outlet for this pus in order to limit the exudate in the pelvis, and if possible prevent the healthy appendage from becoming involved in the peritonitis. For this purpose a vaginal incision was advised and practised, and the fingers were worked through the mass of exudate without reaching any pus. Subsequently this exudate was absorbed. In this case the diagnosis of pus was erroneous. It is a question whether the operation was of service; at all events, it did no harm.

As a further illustration of the difficulties of making an exact diagnosis two puerperal cases will be reported. A patient was seen with Dr. Kerr, of Downingtown, some weeks after the birth of a child. She had had a continuous fever, and also some phlebitis in the right leg. At the time of my visit a large mass of exudate was present in the right half of the pelvis, which I thought was clearly a cellulitis and phlebitis as distinguished from an intra-peritonæal exudate. The persistence of the fever and the extent and density of the exudate made a diagnosis of abscess extremely probable. A vaginal incision was made, and the mass of exudate was penetrated with the fingers almost to the bifurcation of the iliac artery, but no pus was found. The operation had a distinctly beneficial effect upon the exudate, as the fever promptly subsided, and the exudate was rapidly absorbed. The patient made a good recovery, and has since remained well.

The second puerperal case was seen with Dr. Riesman some weeks after labor. She had had a mild septic fever, which had persisted in spite of the usual methods of treatment. When I saw her there was a distinct exudate in the left broad ligament, and also an adherent ovary and tube upon that side. The mass of exudate appeared to be due to a cellulitis, but it was not possible to exclude a complicating salpingitis. As the fever persisted and the exudate increased rather than diminished, an incision was made from the vagina, and the mass of exudate freely opened up with the fingers without reaching any pus. In this case also the effect of the operation was distinctly beneficial, as

the fever soon disappeared, and the exudate was gradually absorbed. When I last heard from the patient, some months after her discharge, she was enjoying good health.

The two puerperal cases have been reported as illustrating the difficulty of making an exact diagnosis, although in both of them the drainage operation was distinctly beneficial.

In other cases, although the diagnosis may be correct, the results of the vaginal operation may be negative. Mrs. J. consulted me with a history that she had been discharging pus from the vagina for nine months, and from an ischio-rectal sinus for five months. She gave a history of repeated attacks of pelvic peritonitis. On examination, the uterus was found fixed in the pelvis by dense organized exudate, and a small mass was felt to the right and behind the uterus, from which pus was escaping through a fistula into the vagina. This condition was complicated by the ischio-rectal sinus. The patient was short and fat, and for this reason, as well as because of the communication with the vagina and the presence of the rectal sinus, it was thought best to try the effect of drainage rather than to do an abdominal section. Accordingly, the fistulous opening behind the cervix was freely incised, and the abscess sac in Douglas' pouch was washed out and packed, and at the same sitting the ischio-rectal sinus was laid open. While the ischio-rectal incision was healing, time was afforded to test the result of incision and drainage of the pelvic abscess, which was distinctly a failure. In a very short time the amount of pus discharged per vaginam was as great as before the operation. About three weeks ago an abdominal section was done, and a very densely adherent small suppurating ovarian tumor was removed from Douglas' pouch. The left appendage was normal. Because of the communication with the vagina and of the densely infiltrated condition of the tissues behind the cervix and the undoubted infection present, I was induced to use a gauze drain, introduced into the vagina by enlarging the existing fistula. This patient is making a good recovery. The vaginal fistula has not yet closed, but the amount of discharge is rapidly lessening.

Incision and drainage failed in this case because of the conditions present. I doubt very much whether the cavity of this suppurating tumor would ever have closed by packing and irrigation, and certainly it would not have done so without repeatedly enlarging the fistula and keeping it packed for months. The case is an illustration of the fact that removal of the abscess sac is the only cure for certain cases of pelvic suppuration.

The last case which I will report is that of Mrs. K., who was re-

ferred to me after the subsidence of an attack of pelvic peritonitis. She told me that she had been in bed more than half the time for the last seven years. The pelvis was choked with fresh exudate, and a large mass filled up the left half of the pelvis. Operation was advised, but before her admission to the hospital she had a relapse, and was extremely ill with pelvic inflammation. Upon admission to the hospital she was so feeble and anæmic, and the local conditions evidently were such as would render a radical operation tedious and difficult, that I felt it best, if possible, to tide her over the crisis by drainage, although the size of the mass upon the left side indicated that she had a suppurating ovarian tumor rather than a pyosalpinx. Upon making an incision from the vagina, a large amount of clear fluid was evacuated, but no pus. I concluded that I had opened a non-suppurating ovarian tumor, and I was unable to feel any other mass which suggested an abscess. The incision was packed, and the patient suffered in no way from the incision, which shortly healed. The persistence of fever rendered a radical operation imperative, and an abdominal section was done. I found a small multilocular ovarian tumor, part of which contained pus; also a double pyosalpinx. The uterus and its appendages were removed. In this case the rectum was so wounded that I felt it was unsafe to close the abdomen without drainage; accordingly a gauze drain was placed from the vagina. A small fæcal fistula formed and the pelvis suppurated, but the patient is making a good recovery.

In this case the impossibility of making an exact diagnosis through the vaginal incision made the drainage operation fruitless; but it did no harm, and showed the absolute necessity for a radical operation in spite of its well-known risks under such unfavorable circumstances.

When a method of treatment is comparatively new, its advocates usually describe its advantages in glowing terms, and say nothing of its disadvantages. Its opponents, on the other hand, decry the operation, but as they do so without experience, their testimony, as a rule, carries little weight. As I have advocated this method of treatment, I thought it might be of interest to the Society to relate these instances of failure or partial success. They carry the lesson that disappointments will frequently follow a resort to vaginal incision and drainage for supposed pelvic abscess. The frequency of failure will of course depend upon the relative accuracy of diagnosis in these cases.

SUPPURATIVE CONDITIONS IN THE FEMALE PELVIS.*

By Yeatman Wardlow, M.D.

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During the past few years gynæcological literature has been enriched by numerous and able contributions, each having for its purpose the consideration of some preconceived line of treatment for the relief of septic pelvic conditions. Step by step has the operative technique of surgery progressed, and almost within the past decade we have advanced from the removal of the normal ovary, as advocated and practiced by Robert Battey, to the eradication of the most widespread pelvic disease, with little or no increase in our percentage of mortality.

Germane to this increased operative skill, the advocacy of more radical proceedures for the relief of given conditions has steadily gained ground. In controversial discussions of the medical profession, the teachings of the past quarter of a century have for the most part been put aside, and surgeons of reputation and recognized judgment have assumed the initiative by advocating and performing operations which years ago would have been considered unjustifiable.

A careful review of the literature of the subject convinces the writer of the futility of any attempt to contribute with entire originality, but in the hope of eliciting from those present a discussion which in some degree, may help to enlighten our present knowledge, this paper is submitted for your consideration. It is my belief, with Spencer, that "only by varied iteration can alien conception be forced on reluctant minds," and it behooves the man who would contribute his mite to the progress of his profession and who, from his own experience, has formed opinions, whether they be original or not, to exhibit his ideas to the criticisms of his peers, that they may be either advocated or condemned.

Suppurative disease in the female pelvic orgaans is perhaps next to malignancy, the most important pathological condition in gynæcology

* Read before the Woman's Hospital Society, December 21, 1897.

with which we have to contend. To the specialist its importance is probably even paramount to that of cancer, for the reason that however late the existing lesion may be brought to his attention by the family physician, there still remains some chance of effecting at least a perceptible improvement in the patient's condition, and in the majority of cases, even a permanent and radical cure.

Truthfully may it be said that no other condition offers the specialist in any line so favorable an opportunity to achieve a brilliant result, provided the treatment is directed with skill born of experience and intelligence. In malignant disease, on the other hand, it must be confessed that the cases are too frequently beyond the aid of even the most skillful surgical interference; the only cases in pelvic surgery in which the adage, "While there is life there is hope," may not properly be applied.

In order to pursue an intelligent study of the subject of this paper, attention is called to the anatomical points of importance in the organs to be considered. The gross relations of the uterus and its adnexia are so well known as to require but passing mention here. Suffice it to say that we should ever bear in mind the embryonic origin of these organs. The vagina and uterus are formed during the second month of uterine gestation by the coalescence of the ducts of Miller on either side, that portion of these ducts above the point of convergence forming the Fallopian tubes, which are in reality but little more than prolongations of the uterine cornua. From this embryonic origin we are led to assume a similarity of structure, in minute anatomy, of the uterus and tubes; a conclusion which has been verified by histological and physiological research. Thus it will readily be seen that the mucous muscular, and, of course, peritonæal layers of the uterus, are in direct continuity with those of the same structure of the tubes; a fact of immense importance in the spreading of sepsis which has gained entrance to the uterine cavity.

That the mucous coat of the uterus is identical in all essential particulars with that of the tubes is an established fact. Physiologists have long since contended that during the menstrual epoch the tubes contribute to the periodical flow in conjunction with the uterine mucosa. However this may be, a most important point to be noted is that the mucosa, both tubal and uterine, have no submucous layer, but lie in direct contact with the muscular fibers. The mucous coat of the cervical canal possesses few points of importance, the arrangement of the mucous folds, the arbor vitæ, and the ciliated epithelium being points of interest in view of their possible action of abetting the en-

trance of septic material into the uterus. The endometrium is of importance, primarily, by spreading septic material into the tubes by its own continuity and through the lumen of the tube, and secondarily, at a later stage of the inflammation, through its close proximity to the lymph spaces between the muscle fibres of the uterine wall.

The muscle fibers and intermuscular tissue are here, as elsewhere, sufferers from the inflammatory condition, their share being a consequence rather than a part of the process.

Probably the most important factors in their influence upon suppurative pelvic conditions, however, are the lymphatics; and it is for the purpose of directing especial attention to them that anatomical discussion is given a place in this paper. A generous supply of these structures exists in the deep and superficial muscular layers of the uterus, extending into the tissues of the broad ligaments, and intimately intermingling with those which extend to the tubes, ovaries, and to the peritonæum beyond.

Whether these lymphatics communicate with the endometrium or not, is a disputed question. Eminent authorities say that they do. But be this as it may, the absorption of sepsis through this channel is an undisputed fact, and it is here that the anatomical observation of the absence of the submucous layer becomes of interest.

The peritonæum covering the uterus and the tubes also receives ramifications of these lymphatics, and in this connection may be recalled the fact that the normal histological structure of this membrane is essentially that of a lymph-sac receiving the terminal ends of the lymph vessels.

I believe that in the last-named structures lies the key to the situation; that in them the pathological facts determining the radical procedures for the relief and cure of suppurative pelvic disease are to be observed.

With a passing apology for this somewhat prolonged anatomical dissertation, let us proceed to the practical conclusions to be drawn therefrom.

To the modern surgeon it goes without saying that the corner-stone of the cure of all suppurative pelvic conditions is essentially the question of drainage, either through the channels of nature or by artificial means.

The well-known power of the peritonæum and lymphatics is an element of vast importance in the resistance of early invasions of the milder infections, but for relief from conditions of a more severe nature, where, from the virulent character or the prolonged duration of the in-

fection, the functions of nature's channels have been impaired, or even destroyed the sufferer must finally turn to the surgeon.

Assuming it to be an established fact that in cases requiring surgical interference our main reliance is to be placed in drainage, with excision of the diseased parts when drainage has proven inefficacious, or is impossible, it shall be our object in this paper, not to advocate any particular procedure to the exclusion of the others, but rather to urge upon the profession a more careful application of those principles at our command to the class of cases for which they are best suited.

That bane of past gynæcological history, the ruthless and unnecessary sacrifice of useful generative organs, has been and doubtless will be more perfectly remedied as more scientific and conscientious endeavor on the part of the physician to make accurate diagnoses gains ground. At the same time, and for the same reason, the exploratory incision is rapidly becoming comparatively a thing of the past.

True conservatism, be it said in our honor, is, as it should be, now in the ascendency in gynæcology; but I maintain, however, that in no sense can any procedure which fails to relieve or cure the condition for which it is performed be called conservative. In this connection much adverse comment will, I doubt not, be passed upon the assertion which I shall make in this paper, that the operation of salpingo-oöphorectomy is never indicated for the cure of the condition of pyosalpinx.

The careful student who has had opportunity for observation will bear with me in the statement that our past efforts in the cure of pelvic disease of septic origin have not been entirely satisfactory, and that the recorded cures in our hospital books will hardly bear close inspection.

In an attempt to investigate this subject I have been able to trace, either directly or indirectly, the subsequent history of sixty-one selected cases of this class from whom the ovaries and tubes had been removed.

Of these my records show that only twenty-seven have been entirely or practically relieved; three have since died of peritonitis; two have succumbed to subsequent operations for the relief of their sufferings; four have been relieved by subsequent hysterectomy, of the symptoms which persisted after the first operation, while the remainder have recived practically no benefit, or have even been made worse. Such has been the history of the operation of salpingo-oöphorectomy for pus tubes. Vaginal incision and drainage, practiced even from earliest surgery, would undoubtedly, if thoroughly investigated, give a similar history, and the readiness with which the operation was forsaken upon the discovery that the diseased adnexia could be removed through the

abdominal incision, is perhaps the strongest proof of its failure to give the desired result in at least a portion of the cases.

Obedient to the dictation of necessity, the cycle of surgical progress again revolved, and among the surgeons of the largest clinical experience the operation of hysterectomy found its advocates; the natural result of failure of mere removal of the pus tubes to accomplish the end in view. Salpingo-oöphorectomy, having been tried, had been found wanting, and those whose official connection with gynæcological institutions preceded the advent of hysterectomy for suppurative lesions, will recall with me the large number of cases which were subjected to operation without permanent relief. The sixty-one cases which have already been cited are fair examples of the results obtained.

In compiling the annual report of the Women's Hospital, I was greatly impressed by this fact, and yet I have no doubt our results were fully as good as were obtained in other institutions at that time.

That the operation of hysterectomy brought with it better results can hardly be denied even by its enemies. At the same time perfection of modern technique has enabled the mortality of the operation to compare favorably with that of the less radical procedure.

Since, in a certain number of cases vaginal incision with drainage has proved adequate, while in others it has failed to give more than temporary relief, common sense would seem to indicate the necessity for a combined effort on the part of the profession to determine with more accuracy, those instances in which the graver operation is indicated.

I think it has been the experience of most gynæcologists that infections of the uterus and adnexia of a gonorrhœal origin are less severe in their symptomatic history than those resulting from the septic traumatism of abortion or labor. Limited by the resisting power of the comparatively normal mucous membrane, the pathological process is prevented, for a time at least, from involving the surrounding tissues, and is confined to the cavities of the uterus and tubes. I believe that it should never be forgotten, in considering the *early* pathology of pyosalpinx, that the accumulation of pus in the sense of forming an abscess, is merely the secondary result of a previously-existing inflammatory condition.

Furthermore, unless the lymphatics have become involved through some form of traumatism such as I have already mentioned, the trouble is, in the majority of cases, limited to the tubes during the early part of the disease.

I have seen a pus-tube develop within a space of five weeks in a

dispensary patient with a gonorrhœal infection; and that, too, without any symptoms other than those of the original specific trouble.

In these cases, and in these only, can the vaginal incision with evacuation and drainage of the pus cavity, be used as a curative measure with prospect of success. When, however, the pathological condition has assumed a less limited character, and the germs of infection have spread into the adjacent tissues through the agency of the complicated lymphatic system, then, I must insist, that interference by this method is, in most cases, but a tentative and palliative one.

For the purpose of practical consideration of the operative treatment of septic pelvic conditions, I shall divide the cases roughly into three classes.

1. Those in which either from the short duration of their existence and the character of the infection, or as a result of the subsequent curative efforts of nature, form a separate and distinctly defined collection of pus, having for its *enclosing limits the walls of the tube itself.*

2. Those cases in which there is general septic infiltration of the lymphatic and cellular tissues of the pelvis, the pus cavity being merely a part, *comparatively unimportant*, of the entire pathological condition, and in the majority of cases contributing but little to the patient's symptoms.

3. We have the condition of pelvic abscess pure and simple, the pathology of which, of course, includes areas of necrotic tissue, the pus cavity perhaps not involving the tube.

In the first class of cases I feel sure that I will meet with little opposition when I say that liberation of the fluid in the tubes by means of vaginal incision is the only justifiable procedure.

The risk to the patient from shock is practically nothing, while the danger of a fatal termination from a septic peritonitis is vastly less than in any operation which can be done through the abdominal route. More especially is the latter statement true in those cases in which nature has thrown out her barrier in the form of adhesions above.

It is in those cases, however, in which the onset of the trouble has been too recent for the formation of many adhesions, that the method offers the conscientious surgeon special advantages, for evidently there is better chance of preserving to the woman a useful tube.

Several instances of pregnancy have been recorded in cases of this kind in which the other ovary and tube had been previously removed.

Although, of course, the danger of peritonitis is greater in these cases, my experience is that this may be overcome by careful attention to the details of technique. The patient being placed in the ordinary

lithotomy position, a slightly curved incision is made, not at the cervico-vaginal junction, but rather nearer the rectum than the cervix. Little fear need be entertained of wounding the rectum if reasonable precautions are taken, while experience has taught me that through this incision the operative field of view is much greater than through an opening made nearer the uterus. The patient is now raised to the dorso-Trendelenberg, or exaggerated lithotomy posture, the intestines gravitating toward the diaphragm; the hand of an assistant, placed anteriorly, depresses the fundus uteri, with its adnexia, into view through the incision, which is held open by means of the finger or long retractor. Protecting the intestines above with a gauze sponge, the contents of the distended tube are liberated through a longitudinal incision made with either the scissors or scalpel. The cavity is sponged out and lightly packed with gauze. Irrigation of the cavity is superfluous and unnecessary, and, I believe, is more apt to do harm than otherwise.

In approaching cases of the class in which the lymphatics and neighboring tissues have become infiltrated and structurally destroyed by the gradual advance of the suppurative process, it seems decidedly illogical to remove the distended tube alone, leaving behind tissues more complicated and equally diseased.

Histologically, the tubes are a part of the uterus, and the same system of lymphatics being common to both, it is but reasonable to assume that infection of the one must, in due time, be followed by infection of the other.

The uterus being merely supplementary to the ovaries and tubes, it is of absolutely no value either as a sexual or generative organ when left alone in the pelvis. Moreover, the organ left may be the seat of further trouble. Pathological changes, perhaps even present at the time of the operation, although unsuspected, or of subsequent development, always threaten the patient.

How many of us have not seen patients with persistent symptoms after the first operation, relieved by subsequent hysterectomy? I have, myself, had three such cases within two years and a half, and have seen several more in the experience of others.

Again, a patient operated upon more than seven years ago for double tubal trouble, presumably septic, though it matters not, presented herself to me a little more than a year ago with inoperable cancer of the uterus. That poor woman, undoubtedly, wished that her operation had been more complete.

Finally, as a last and important reason for hysterectomy I would

urge the question of drainage. This can be far more perfectly and scientifically applied when the uterus has been removed. More especially is this so, when we have chosen complete removal by vagina, as our method.

Concensus of opinion has, of late years, leaned strongly toward the removal of all the diseased parts in these cases, and I have little hesitation, after careful study of the results obtained, both in my own and in the experience of others, in declaring my belief that this is the operation to which we must look for the best results.

In making choice of method of operation, I am aware that both the abdominal and vaginal routes have their steadfast advocates.

Generally speaking, the surgeon is prone to that method with the technique of which he is most familiar. I cannot resist the opportunity afforded by this paper, however, to urge strongly the advantages of the vaginal operation as they appear to me.

Patients are often quite natuarally opposed to the abdominal incision, and will face with more fortitude the operation which does not involve mutilation of the person. The danger of ventral herniæ is obviated. Handling of the intestines is avoided. The adhesions which nature has provided for the shutting off of peritonitis are preserved, and the danger of death from that cause is much lessened.

Finally, the time of operation is shortened, and the exposure to shock is greatly decreased. With modern technique the operator of ordinary skill need not require more than twenty minutes or a half-hour for the entire procedure.

I would especially advocate those methods which allow release of pressure from the broad ligaments as soon as hæmostasis has been accomplished, thus avoiding slough, and allowing the intra-ligamentous tissues to drain.

With this idea in view it has been my custom to perform the operation by clamps, which are loosened in twenty-four, and removed in thirty-six or forty-eight hours, as circumstances seem to indicate. Pain from the clamps is much lessened by prolonging the incision around the cervix about half an inch into the base of the broad ligament, thus avoiding the grasping of the vaginal tissue in the forceps.

When the vaginal orifice is small, I have frequently used the Grad knot for the uterine arteries, in place of the lower pair of clamps, with great advantage.

In pelvic abscess, with vaginal fluctuation, the immediate indications are extremely simple; but the subsequent management of each individual case must be a law unto itself. Persistent symptoms de-

pendent upon pathological changes, however, must be classified as one of the indications for hysterectomy.

To summarize: The writer believes that cases of pus-sack of recent formation, and more especially those of a gonorrhœal origin, may be treated by the vaginal incision and drainage with better prospects of success, than by any other method. Free irrigation is useless, and even dangerous.

That by this method useful organs are often preserved. That when either as a result of long standing, or from some form of traumation at the time of the infection, the lymphatics and neighboring tissues have been invaded and destroyed, the lesion is too complicated, as a rule, to be reached by vaginal drainage, and recourse must be had to complete excision of the diseased parts.

That the vagina is the route of preference for the treatment of all suppurative conditions, preserving as it does the barriers which nature has created in the form of adhesions, and may be used with less danger of shock to the patient than the abdominal incision.

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EDITORIAL.

THE STATE MEDICAL SOCIETY IN 1898.

The State Society met in Albany on January 25th and adjourned on January 27th. Many pleasant things were said and listened to and, besides the usual medical contributions of special interest and value, a few papers were read upon the Control of the Milk Supply of Cities, the Hygienic Management of Dairies, The Rivals of the Physician in Practice and upon Medical Expert Testimony. Following each of these subjects there was also pleasant but not too exhaustive discussion but nothing was said or done to mar the general pleasantness of the members' annual "outing." All reference to the all-important subject of the Hospital and Dispensary Abuse was carefully avoided and the County Medical Society of this city was left to fight this battle alone. We wonder if the State Medical Association, had it met at this time when a bill for the remedy of this outrage is pending in Albany, would equally have shirked its evident duty to the profession and have insisted upon allowing nothing to mar a pleasant meeting. The pleasantest thing which the members heard was the following statement in the Inaugural Address of the President, Dr. Seneca D. Powell, of New York, who said, with a delicacy of ironical humor for which we hardly gave him credit: "We are united in our brotherhood, contented with our affiliations, honored in our government and enjoy the blessings of harmony (*sic*). The only shadow which has fallen upon us is the shadow of death, twelve of our Fellows having died during the past year." After accepting such a statement as this from

their President, we are not surprised that the members determined to shut out the echoes of recent meetings of the County Medical Society of New York and to have a pleasant time.

As a corollary to the evident conscientiousness and fearless determination of the State Society "to have a pleasant time," the following excerpt from the *New York Sun* of February 10, 1898, under the caption "To Fight the Dispensary Bill" is very instructive. We give it verbatim:

Pursuant to a recent call, there met in the rooms of the Transportation Club, Hotel Manhattan, last night, representatives of a number of free dispensaries in New York, to take action on the Sullivan bill, now pending at Albany, which places free dispensaries under the direct control of the State Board of Charities. The bill was introduced in the Legislature at the instance of a large number of physicians, with a view to preventing the alleged abuse of free dispensaries.

J. G. Cannon was elected permanent President at the meeting last evening, and Charles M. Earle, Secretary. It was agreed that the organization should be maintained until the fate of the bill had been decided, and that every means should be used to secure its defeat. The general tenor of the discussion was to the effect that under the provisions of the bill, the dispensaries would be deprived of the right of self-government, and that licenses, after having been granted by the State Board of Charities, could be revoked at any time the board deemed it advisable.

After suggestions were made as to amendments, Dr. D. B. St. John Roosa, President of the Post-Graduate Medical School and Hospital, argued for an unequivocal opposition to the measure. He characterized it as an impudent effort to take charge of the free dispensaries, and dictate to men of extended experience, the manner in which these dispensaries should be conducted.

Dr. Wicks Washburn, who, as a representative of the County Medical Society, had much to do with the formulation of the act, was called upon to defend the measure. He read reports of investigations which showed that fully 55 per cent. of the people treated at the free dispensaries were able to pay. Dr. Washburn's arguments and figures were laughed at. One gentleman, who refused to give his name, said that he would not trust the State Board of Charities, although he was acquainted with all of its members.

"Oh, that bill will never pass," said Dr. C. B. Meding, "for it is in the hands of Dr. Roosa, and he can kill it if he wants to. Why, Dr. Roosa has the Legislature under his thumb."

A motion to appoint a committee of five to appear at Albany at a hearing before the Assembly committee on Feb. 16, was carried with only two dissenting votes. The dissenters were Dr. Julius Weiss, representing the east side dispensaries, and Dr. Alexander Hadden, representing the northeastern dispensaries.

"If you gentlemen represent dispensaries that are guilty of abuses, why don't you correct them?" asked one physician.

"We do not believe we are guilty of abuses," said Dr. Weiss, "but we are perfectly willing to stand the test of investigation, and if we are in the wrong, to be closed out of business. We believe there are abuses and we want them corrected, no matter who suffers."

Funds will be raised to fight the bill, and a large delegation will accompany the committee to Albany.

We do not know if indeed "Dr. Roosa has the Legislature under his thumb" nor what he and the other abettors of the Dispensary Abuse may have in the palms of their hands on their proposed trip to Albany but, in view of the fact that Dr. Roosa is still permitted to remain a member of the County Society and that the right to call himself technically a member of the profession "in good repute" has not yet been officially denied him, we would not be surprised if he felt, with some justification, that he had the New York Society, as well as the profession of this city, under his feet and meant to keep them there at his pleasure.

NECROLOGY.

JULES ÉMILE PÉAN.

In the death of Dr. Péan, the medical profession throughout the world has sustained a great and equal loss. Though a native and resident of France and of that country for many years the one great luminary, the "bright particular star," as a surgeon he was also a citizen of the great medical Cosmopolis and the whole profession, of whatever nationality, are sharers in his renown and co-heirs in the immense advance and efficiency of modern surgery, which his boldness, courage, skill and industry so largely assisted to inaugurate and to maintain.

The most remarkable feature in the professional life of Péan was, perhaps, his uniqueness in the French Capital, as a laparotomist, for many years. It amounted practically to isolation. Fifteen years ago, it was a common saying among American students making the tour of foreign hospitals in search of expert work in abdominal surgery: "There is nobody in Paris and nothing to see but Péan." Like Spencer Wells and Keith in Great Britain he also suffered from the misunderstanding and odium inseparable from the lot of a pioneer in an unknown and dangerous surgical field. Like them his motives were aspersed, his judgment sneered at and his statements denied; his course was even a harder one, for prejudice and intense conservatism are more demonstrative even if they be not more characteristic qualities of his countrymen than of the English. But like them he lived to receive his vindication and the gratitude of the profession.

Again, we are struck with the fact of his marvelous industry and the great number and scope of his surgical operations. He truly deserved the designation *general surgeon.* After we come to know the amount of his work, his remarkable successes and startling statistics appear as a foregone conclusion and our admiration of them as an anti-climax.

Both to obstetricians and to gynæcologists, Péan's name signifies much and by the latter the value of his services in the early days of hysterectomy and ovariotomy cannot be overestimated. He maintained the practicability of these abdominal operations at a time when asepsis was an unknown quantity and the popular verdict upon them was certain death. By his courage and steadfastness of purpose and personal skill he proved that one operator at least could perform operations before which most of his contemporaries stood helpless and appalled with, for those times and methods, astonishing success. It was evident that what one man could do other men might do and thus he gave the impetus which, particularly in his own land, has brought to the front the galaxy of brilliant laparotomists which adorn the name of France to-day.

His end came suddenly. On Saturday, January 29th, 1898, he was seized with a violent attack of pneumonia, a concomitant of an influenza from which he was suffering and which he neglected in his round of professional duties. He at once realized his danger and foretold his death. He reconciled his soul with God and settled his affairs with man and died on Sunday, January 31, within forty-eight hours of the recognition of the disease.

JOSEPH O'DWYER, M.D.

Dr. O'Dwyer died at his residence in New York on January 7, 1898, after a severe and painful illness of more than a month; the final cause of death, as shown upon autopsy, being a thrombosis of the basilar artery with softening of the right lobe of the cerebellum and right half of the Pons and localized meningitis.

Perhaps no member of our profession, who had accomplished a great work and performed a lasting service to mankind, has ever exhibited so unaffectedly modest a disposition and such an adverseness to personal glorification as did Dr. O'Dwyer. This quality so much at variance with the almost universally prevailing fashion among members of our profession—where meretricious self-advertisement and self-praise have become practically a part of the regular "business" of the

practice of medicine—is so unexpected and so surprising when met with among us to-day, that the latter emotions almost overshadow our feelings of profound admiration and homage.

As a matter of fact, Dr. O'Dwyer was less well-known and less talked about among his fellow-practitioners in his own city than many a graduate of a few years' standing who, though God in His wisdom has denied him the ability ever to accomplish anything worthy of serious notice, has nevertheless had the acumen to fill the medical press with unending compilations of other men's ideas and the Transactions of Societies with reports of travestied attempts at the performance of other men's operations. Yet Dr. O'Dwyer's contribution to the science of pædiatrics was so original and so great that his name will never be forgotten. His theory of intubation of the larynx in diphtheria and the mechanical device which bears his name have been the means of saving innumerable lives. To O'Dwyer alone belongs the credit for this result for, although Bouchut of Paris conceived the same idea and presented his tubes in Paris many years before, his method was condemned and never promulgated. Had Bouchut been as sure of the value of his discovery as was O'Dwyer of his, the former's work would have survived the prejudice of his times. As it is, to O'Dwyer, who was entirely unconscious until he had completed his work of Bouchut's priority in this field, belongs an equal claim for originality and, what is of greater importance, the practical demonstration of its value and its popularization. Like many other men of real merit, he was more highly appreciated and esteemed out of his own country than in it.

Dr. O'Dwyer was born in Ohio in 1841 but passed much of his early life in Canada. He received his academic education at the McGill University of Montreal and later graduated in medicine in New York at the College of Physicians and Surgeons in 1866. He served as interne at Charity Hospital and also as Examining Physician at Bellevue Hospital. At the time of his death he was Attending Physician to the New York Catholic Foundling Asylum and to St. Vincent's Hospital in this city and Consulting Physician to the Seton Hospital for Consumptives.

ERNEST ABRAHAM HART, D.C.L., M.R.C.S., London.

Mr. Ernest Hart of London was for thirty years the editor of the foremost medical journal of the world, the official organ of the British Medical Association and his services to his profession and to hu-

manity at large, through the immense power which his position gave him, can hardly be overestimated. Through the influence on public opinion of the *British Medical Journal* he was enabled to present abuses, to force their redress upon public notice and to demand adequate legislation. Not only in Great Britain but throughout the vast dominions of the Empire, the voice of this great journal was heard and recognized. As a unifying force in the profession its influence was very great and might have been greater but, even as it was, under his management the *British Medical Journal* has been an exemplar and an inspiration to the medical press throughout the world and for that alone he deserves our profound gratitude.

Mr. Hart was a man of great breadth of education and many cultivated tastes. Well known as he was in medicine he was equally if not better known in the world of art. In the East generally but especially in Japan, he was a recognized authority upon everything pertaining to the fascinating art of that country and his opinion in regard to the art history and development of that people always received the profound attention and respect of native experts. He was as well known in many other directions and his interest in public affairs in all countries was constant. In conjunction with his wife, a woman of great ability, enthusiasm and energy, he used strenuous effort to encourage the revival of Irish industries, especially in Donegal, and thus endeavored to relieve the woful commercial depression of that nation and to counteract, at least in a small degree, the persistent industrial discrimination against Ireland for which his Government and people are responsible. In many legislative attempts at the remedy of public abuses and nuisances, of menace to public health, especially among the poor, Mr. Hart was the prime mover. His life was very full yet in the midst of his more general and broader interests and duties he did not neglect to contribute personally to the scientific literature of his profession.

Mr. Hart was born in 1836 and received his early education in London. He studied medicine at the medical school connected with St. George's Hospital and was admitted to the Royal College of Surgeons in 1856. In 1866 he assumed the editorship of the *British Medical Journal* and died at his post.

Being a man of such wide experience and liberal education and being at the same time of a nervous and enthusiastic temperament Mr. Hart was a delightful and most entertaining companion. He had traveled over the greater part of the world, frequently in a semi-official or Governmental capacity, and the opportunities thus afforded him for

minute and accurate observation were very great and were well used. For many years his health had been feeble and, after heroic struggles against the inevitable, he finally fell a victim to diabetes on January 7, 1898.

THEOPHILUS PARVIN, A.M., M.D., LL.D.

Dr. Parvin was for many years one of Philadelphia's most conspicuous obstetricians and his reputation was international. He had been since 1883 Professor of Obstetrics and of Diseases of Women and Children at the Jefferson Medical College and occupied that post at the time of his death.

Since last Christmas he had suffered much from dyspnœa due to heart disease and the immediate cause of his death was pulmonary œdema due to Bright's. He died on January 29, 1898, in Philadelphia.

An extended sketch of Dr. Parvin's life and character will be found in the April Number of this JOURNAL, 1892, on page 347, and to that we refer our readers. With that sketch was also published an excellent portrait received at our request from the Doctor himself.

CORRESPONDENCE.

THE STATISTICS OF PUS OPERATIONS.

WASHINGTON, D. C., February 12, 1898.

To the Editor of the American Gynæcological and Obstetrical Journal:

SIR: In the paper of Dr. Taber Johnson read before the Philadelphia Obstetrical Society and published in the last issue of your JOURNAL, page 179, the statistics of Washington surgeons appear in rather an unfortunate light, and I appeal to you for an opportunity to correct what may give rise to an unjust estimate of results obtained by these gentlemen in operations for pus by the abdominal route. On page 181 he says: "One paper by an abdominal surgeon of my own city 'On Sixty-six Laparotomies for Pus' states his mortality at sixteen per cent., several of his fatal cases dying of shock within a few hours of the operation." "Another sends a reprint within a month of 150 laparotomies for pus, with a twenty-five per cent. mortality in his first series of cases, which included a number of large pelvic abscesses

in feeble patients." The latter statement is probably intended to refer to a reprint of a paper of mine which appeared in the *American Journal of Obstetrics* for October, 1897 (vol. xxxvi., No. 3), entitled "The Surgical Technique of Operations for Pus in the Pelvis." I have never reported a list of one hundred and fifty pus cases. In the paper to which Dr. Johnson has referred, it is clearly stated the mortality was three per cent., or two per cent. including all my abdominal work. Again, in the foot note the statement is clearly made that neither of the cases (deaths) was a pus case. I have always reported my cases (pus cases and all others) and have lost but one pus case (laparotomy) in more than two years of active surgical work. The cases where a twenty-five per cent mortality was obtained consisted of "Twenty Cases of Pelvic Abscess" reported in the St. Louis *Medical Review* while I was yet a novice in this difficult work.* The high mortality was mentioned by way of apology, because I think every man who has a high mortality should apologize and should also consider the propriety of turning his work over to some one who is better qualified. In defense of the abdominal route I have collected sixty cases (laparotomies) occurring in my last two years' hospital service where pus was present in greater or less amount, in which the mortality was *one.* This was a victim of too much conservatism, for a pus tube was allowed to remain which gave rise to peritonitis and bowel obstruction. So far as the reference to another Washington man is concerned I have only this to say, he deserves credit for having the courage to report his cases, which is more than can be said of some.

I. S. STONE, M.D.

PELVIC ADHESIONS IN LAPAROTOMY: A SUGGESTION.

NASHVILLE, Tenn., February 6, 1898.

To the Editor of the American Gynæcological and Obstetrical Journal:

SIR: I beg to submit the following practical suggestion for what it may be worth:

We often encounter great difficulty in freeing diseased tubes and ovaries from their prolapsed and acquired position low down in the pelvis. Especially is this true when we are operating upon women with thick abdominal walls and the bowel is engaged in the mass of adhesion. Trendelenburg's posture is an invaluable aid in these cases

* These cases occurred in practice as follows: 1891, 5 cases; 1892, 12 cases; and 1893, 3 cases; 5 deaths.

and should always be employed, yet I would suggest an additional procedure which has greatly simplified my work. The patient being in Trendelenburg's posture the assistant introduces two fingers into the vagina and raises up the pelvic floor. By this simple manœuvre the diseased structures are brought very much nearer and we can by sight and touch locate the line of adhesion and free the diseased appendages. Should accident occur to the bowel we are sure to detect it.

RICHARD DOUGLAS.

Willcox Building.

OUR BERLIN LETTER.

(From our Special Correspondent.)

THE SCHENCK THEORY OF SEX GENESIS—OPINIONS OF DR. A. MARTIN—OUR CORRESPONDENT'S VISIT TO DR. SCHENCK IN VIENNA—THE CHARACTER OF THE CROWDS IN HIS ANTE-ROOMS—DR. SCHENCK DISCUSSES HIS THEORY AND BEMOANS HIS PERSECUTION BY WOULD-BE PARENTS AND THE PRESS—HIS EXPLANATION OF HOW THE SECRET LEAKED OUT—HE WILL NOT TREAT INDEPENDENT CASES UNTIL THE COMPLETION OF HIS EXPERIMENTS—HE STATES HIS POSITION AND THE CAUSE OF HIS RETICENCE.

BERLIN, January 15, 1898.

Before this letter reaches you, the New York daily newspapers will doubtless have fully apprised you of the recently announced discovery of Professor Dr. Schenck in relation to sex genesis. What those papers have printed I cannot know for a week; but if they have reproduced all that has appeared in the German dailies they have been full of the grossest nonsense and rankest exaggeration.

The Berlin dailies have printed leading articles anent the discovery for the past few days. Not being a close student of the newspapers I had only heard of the discovery through my uncle, Dr. A. Martin, who casually mentioned it one evening at dinner. He did not seem to be very much excited over it, rather referring to the topic in a joking manner, and the subject had dropped from my mind when, the next morning, while assisting him at an operation in the amphitheatre of his private sanatorium, a note was passed down to me, written in English, as follows:

"Will you be so kind as to ask Dr. Martin to give us his views about the Schenck alleged discovery *in re.* the theory of sex differentiation?"

The wording of the note—especially the presence of the word "alleged"—brought to my mind at once the suspicion that a newspaper correspondent had slipped into the place, using this method to secure an interview, but upon scanning the eager faces ranged tier on tier above the pit, I had no difficulty in detecting the sender of the note who was an American acquaintance.

At the conclusion of the operation I spoke to Dr. Martin, and he addressed the class, in substance, as follows:

"Professor Schenck's discovery is not so much a discovery as it is a step in the advancement of our knowledge of the intricate and subtle phenomena of embryology. The science of obstetrics has made such rapid advancement of late years that the promulgation of a theory of this kind was rather to be expected than otherwise. There is nothing brand-new in the philosophy of Dr. Schenck's theory. It is his application of a well-known tendency as observed in animal and plant life to the human animal, that has given his theory the semblance of a discovery, and so caused this stir in the newspapers. We have all of us known of the practice among the peasantry of our country and France, of endeavoring to influence the sex of embryonic animals by regulation of the female parents' food. Where this idea originated, it is hard to say; possibly it has been handed down from the Greeks and Romans; but the fact remains that the practice has been more or less successful, according to the care employed. That the offspring of the human animal could be influenced in the same manner is an idea that has occurred to many of us, no doubt, but none of us have had the temerity to advance the thought, possibly because we could see no advantage to the human race by so doing. By an inscrutable law nature regulates the production of males and females so that the necessary balance between them is maintained. Once let this process of regulation be interfered with by man and the balance of nature will be destroyed with resultant widespread dissatisfaction. However, it is not a good plan to jump at conclusions and to discuss a man's ideas before he has voiced them in the medical societies. The newspapers have been known to exaggerate and misrepresent, and the better plan is to wait for Dr. Schenck's own dissertation on the subject."

Dr. Martin's words were followed by applause as the clinic dispersed. Groups of students earnestly discussed the matter in the corridor and on the street. I conversed with several who seemed to be well informed, and then I secured the German newspapers and read

up. For the benefit of your readers who do not already know the substance of Dr. Schenck's theory, I will briefly state it.

Dr. Schenck is professor of obstetrics at the University of Vienna and president of the embryological institute there. He claims that he has discovered the secret whereby he can influence the determination of the sex in the offspring of men and animals at the time they are conceived. He bases his assertions on the results of twenty years' experimentation. Although he declines to give out at present the details of his theory, holding that his medical society is entitled to the first exposition of his researches, he admits that it is based on principles of diet; *i. e.*, that the nature of the food consumed by the mother determines the sex of her child.

This much is all that ever came from Dr. Schenck. The newspapers have added a great deal more, gleaned from the imagination of their correspondents.

My interest and that of several of my friends finally determined me to go to Vienna and try the effect of an 'American interview" upon Professor Schenck. Armed with a letter of introduction and many misgivings as to the result of my proposed invasion, I started for the Austrian capital. What the result was I here detail for the benefit of the JOURNAL's readers:

On the morning of my arrival I called at Dr. Schenck's office, or, I should rather say, I attempted to call. The street in front of his house was blocked with carriages of all descriptions, from fashionable laudaus to plebeian cabs. A group of well-dressed people stood on the stoop of the house, waiting to be let in. After repeated pulls at the bell, a servant came to the door, and told us that the crowded condition of the parlors would not permit of the entrance of another visitor until some went out.

The people on the stoop grunted at this, but composed themselves to wait. I fished out my card, my letter of introduction, and a large silver coin, and then pulled the bell again. The door was opened angrily and the lackey was about to say something sharp when I pressed the coin into his palm and requested him to hand the card and note to his master. A glimpse of the coin changed his facial expression instanter, and he departed to do my bidding. In a few minutes he returned and bade me walk in.

I passed through several anterooms, which were crowded to suffocation with visitors, most of them ladies, richly attired and refined-looking. Two-thirds of the people had to stand for the want of chairs to accommodate them.

I got hold of the lackey and told him I could not wait my turn if all those people were ahead of me, at the same time exhibiting another coin and he told me that I would be the next one in.

In a few minutes I was ushered into the sanctum of Professor Schenck. He greeted me cordially, and without wasting time or words we got down to the business in hand.

Without attempting to give a verbatim report of our conversation, I will write the substance of his talk.

He said, in the first place, he was sorry the newspapers had succeeded in ferreting out his discovery for, by their premature disclosures, and above all by their arrant nonsense, they have seriously embarrassed him in his work.

When asked how the papers got hold of the news he replied that he had treated the wife of a Parisian journalist for sterility. At the time she entered his sanitorium he had asked her which she wanted, a boy or a girl, and she had replied a boy. She conceived, and in due time gave birth to a boy, which so completely astonished and delighted her and her husband that the man must have related it to his companions and thus it found its way into print.

This case, however, is only one of a few hundred, any one of whom may have given away the secret, but suspicion points to the journalist for obvious reasons.

Dr. Schenck said he had been experimenting for the last twenty years, but that much more had to be done before his discovery would be in shape for publicity. When interrogated regarding the nature of his discovery and the methods he employs to produce his results he would say absolutely nothing. He admitted that the diet of the mother was a very important part of the treatment; in fact, the principal deduction from the experiments was the law that the determination of the sex was influenced markedly by the character of the food consumed by the mother. He would not say whether women confined to a low diet produced boys or girls, or vice versa.

He began experimenting on animals, and then on human beings, and now has the records of hundreds of cases. He has a large sanitorium, which is always filled to its capacity. He would give me a card of admission to his sanitorium, but admonished me that I would gain no information by it, as I could see nothing and the attendants would tell me nothing.

To the query as to whether he used drugs or chemicals in his treatment he replied that in many cases he did. What the drugs were he would not say; but asserted that they had no direct influ-

ence on the sex infantum, but indirectly in modifying the health of the mother.

When asked whether he could diagnose the sex of a fœtus in utero, he said that in most cases he could, but that he was not infallible any more than he would be in diagnosing other conditions—he was liable to error. He based his diagnosis on the history of the patient, physical examination of the mother, analysis of the blood, etc.

To the question as to whether he could influence the determination of the sex at any other time than during or before conception, he answered that he thought he could influence the determination of sex at any time prior to the fixation of it by nature. Precisely at what time during fœtation that occurred was the object of his most interesting experiments.

To a host of other questions, more or less leading and pertinent, he had no reply to make. He was always courteous, but at the same time careful and firm not to say too much. He had been interviewed before. When he could not make an evasive reply to a question he would say, "That will all be fully explained before the scientific body to which I belong, sometime toward the close of the year."

His desk was piled high with letters from all parts of the world. He showed me a large side table, stacked with unopened letters, and each mail brought more. These letters were from all classes of people, including the nobility. The letters from doctors and scientists were numbered by the hundred, and were laid to one side to be answered first. There were a great many letters from devoted wives who were anxious to please their husbands by presenting them with boys. And strange to say the professor showed me a couple of letters in which the writers said they had children—girls two and three years old—which they wanted changed to boys.

Finally he said, in conclusion: "I cannot work, I cannot write, I cannot attend to my practice. I am pestered from morning to night. I am doing all I can to correct the impression that I am practicing my system. I will not accept any fee nor give any advice about this subject at present. The only persons whom I will treat are those upon I am experimenting in my private sanitorium."

In spite of all his protests his house is packed daily with excited and anxious people, demanding that he see them. Some are willing to pay enormous fees for treatment. In only a few instances do these people desire girls. The female sex seems to be a drug on the market. The professor contemplates a surreptitious trip to the country to escape the confusion in his household.

I expect to see some of the professors here to-day and hear what they have to say; but will not hold this letter back, as it will just catch a steamer now, and it is long enough, I am afraid, as it is.

VICTOR NEESEN.

REVIEWS.

The American Year Book of Medicine and Surgery, 1898. A Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery drawn from Leading American and Foreign Authors and Investigators, collected and arranged with Critical Editorial Comments by S. W. Abbott, M.D., J. J. Abel, M.D., J. M. Baldy, M.D., C. H. Burnett, M.D., A. Church, M. D., J. C. Da Costa, M.D., W. A. N. Dorland, M.D., L. A. Duhring, M.D., V. P. Gibney, M.D., H. W. Gibney, M.D., H. A. Griffin, M.D., J. Guitéras, M.D., C. A. Hamann, M.D., H. F. Hansell, M. D., B. C. Hirsh, M.D., E. F. Ingals, M.D., W. Johnson, M.D., W. W. Keen, M.D., H. C. Ohls, M.D., W. Pepper, M.D., W. Riber, M.D., David Riesman, M.D., L. Starr, M.D., A. Stenzel, M.D., G. N. Stewart, M.D., J. R. Lillinghart, Jr., M.D., T. S. Westcott, M.D. Under the general editorship of George M. Gould, M.D. Published by W. B. Saunders, Philadelphia.

To those gentlemen of the profession who wish to keep up with the great activity of scientific investigation and progress and yet not spend all of their time in separating the wheat from the tares of medical literature this work will be invaluable. The popularity of the previous volumes shows that they have fulfilled a need in the physician's library, and that the advantage of consulting a single book to find what has been written upon a given subject during the year, instead of hunting through the files of the journals, is being appreciated.

In gynæcology the principal features of the year's work seems to have been the study of the treatment of retrodisplacements of the uterus, the intimate relationship between the nervous system and the sexual apparatus and the important influence of gonorrhœa in the male The experiments with organo-therapy in the treatment of uterine fibroids has been watched with interest. The question of bicycling for women is still *in statu quo.*

The subject of midwives has agitated obstetrical circles but the solution of the problems that it presents has not been reached.

Symphysiotomy, owing to its mortality and the difficulty in its performance, has lost some of its popularity during the year.

In pædiatrics the study of infant feeding and of the infectious diseases seem to have attracted most attention.

To say that the present volume fully maintains the high standard set by those of previous years is to commend it.

The illustrations and colored plates are attractive and their execution excellent. X. Y. Z.

A Manual of Obstetrics. By A. T. A. KING, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in the Medical Department of the Columbian University, Washington, D. C., and in the University of Vermont. Seventh edition.

To most of those who have studied medicine during the last fifteen years the manual needs no introduction. It comes to us like a friend of our youth, bringing with it visions of lecture-rooms, manikins and bones. Like most of us it has grown somewhat plethoric with age and wealth of knowledge, but notwithstanding its internal improvements many familiar features are retained even to its outer garments.

That this work should have reached a seventh edition when so many other "Manuals" on the same subject have been published indicates the high estimation in which it is held by the profession. In the present volume the chapter on "Puerperal Septicæmia" has been rewritten, and the importance of Antiseptic Midwifery emphasized and otherwise brought up to date. M.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, December 17, 1897.

The *President*, HENRY P. NEWMAN, M.D., in the Chair.

Tubercular Uterus, Tubes and Ovaries removed by the Vaginal Route.

Dr. FRANKLIN H. MARTIN: Mrs. S., aged twenty-eight. *Family history:* One sister died of tuberculosis; otherwise, history is good. *Personal history:* Patient had "lung fever" when three years old; good recovery. When twelve years old she had a nervous trouble which resembled chorea, lasting a month or two. She was always "nervous," as she expresses it, till after her first menstrual flow. Age of puberty, fourteen. Flow fairly regular, normal in amount. She had always been healthy and strong until the beginning of the present trouble. Was married when twenty and has had one child and one miscarriage. *Present condition:* About two years ago she gave birth to her first child, and she has not been well since. She has had no pain or definite trouble, except a tired feeling, until one year ago last May, when she suffered with ascites. This attack, which the family physician called peritonitis, lasted four or five months but the patient was not confined to bed. The fluid in the abdomen has never entirely disappeared. Ten weeks ago she had an attack of sciatica and has been confined to her bed ever since. Last January the menstrual flow stopped and the amenorrhœa lasted for six months. In July she menstruated and was regular for three months. Since September she has had a continuous bloody discharge from the vagina. Patient complains of some abdominal pain with radiating pain down the thigh. She lost considerable weight at the time the ascites was present, but she has gained in weight since last April. There has been no cough. Bowels constipated. *General Examination:* Mind clear. General nourishment poor. Skin pale and mucous membranes anæmic. Tongue coated in centre. Heart and lungs normal. Liver dullness normal, spleen is not palpable. Abdominal walls are distended, tympanitic and rigid. With patient squarely on her back

there is some dullness on either side low down in abdomen. Line of this dullness changes with change in patient's position.

Operation: Vaginal hysterectomy, broad ligaments being secured with clamps. Both tubes were quite firmly adherent but were easily enucleated. A loop of intestine projecting down into the vagina was studded with small tubules. Very little fluid was found in the abdominal cavity. The operation was performed November 22. The patient's recovery from the operation has been ideal and uninterrupted. Her general nutrition is much improved, and she is much better in appearance than immediately before the operation; she expresses herself as improved and she appears to have gained in blood and flesh.

Dr. Beffel the pathologist, will interpret the specimens.

Fibroid Uterus and Sarcoma of Ovary (?) removed by the Abdominal Route.

Mrs. P., aged forty-one, married, child twenty years old. Menstruated at thirteen. Had dysmenorrhœa until child was born. Shortly after child was born, patient began to have menorrhagia, which increased in severity up to the time of operative interference Family history good. Several years ago an abdominal tumor was discovered and diagnosed myofibroma of the uterus. I saw the patient three months ago and advised an operation for the relief of the patient. November 9, at the Woman's Hospital, I removed the specimen, which I present. To the right of the uterus, with its small multiple fibroids, was discovered a tumor which had been previously diagnosed as a subperitonæal fibroid. It had an unusual appearance for the position it occupied. It was a mass, when fresh, about the size and shape of my two hands with their two palmar surfaces applied, with the attached end corresponding to the wrists, attached in the broad ligament with a thin ligamentous pedicle about a *c.m.* in diameter, while its thin edge, corresponding to the fingers of the hand, floated among the intestines to the right of the uterus. In color and consistency, it resembled the normal spleen.

I removed the uterus and the unknown tumor, and the patient made a satisfactory recovery. In examination of the specimen afterwards, I decided that it had its origin in one of the fœtal remains of the right broad ligament and pronounced the tumor a teratoma, because of its resemblance to a tumor I had removed at the Post-Grad-

uate Hospital several months before, which had been denominated teratoma by Professor Klebs.

The pathologist's report on this specimen is of interest.

Report of Pathologist.

JOHN M. BEFFEL, B.S.: We have two specimens for demonstration to-night, both from Dr. F. H. Martin's clinic at the Chicago Post-Graduate School.

The first specimen is one of tuberculosis of the tubes, ovaries and uterus. When the specimen was removed by vaginal hysterectomy, the left tube and ovary were adherent to the posterior wall of the

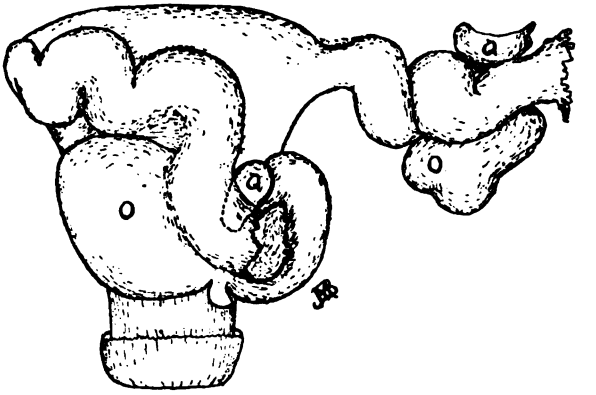


FIG. 1—Is a posterior view of the uterus, tubes and ovaries as removed, showing the left tube and ovary adherent to the posterior wall of the uterus; (*a*) is the small growth described.

uterus. *The tubes* are, as can be seen, highly convoluted, resembling the infantile form of tube, and greatly distended along their whole length, especially at the distal extremity. From near the fimbriæ of both tubes on the superior surface and underneath the peritonæum a small body about the size of a goose-quill arises; that on the right tube turns to the anterior surface of the broad ligament, is about three centimeters in length and ends in a small cystic dilatation; that on the left tube drops to the posterior surface of the tube and ends in a cyst about the size of a normal ovary, which is adherent to the ovary at the fimbria ovarica. The walls of this cyst were broken, and the surface showed that the cyst was made up of yellowish-white caseous material.

On section, the tubes are found filled with yellowish-white caseous material, which completely fills the lumen of the tube.

Microscopic examination shows the mucous membrane almost completely destroyed, being replaced by caseous material, portions of the mucous membrane are crowded toward the muscularis and look not unlike glands lined by low, columnar epithelium; two or three sections much larger than the others have become slightly cystic, forming pseudo-follicular cysts, and are filled with material similar to that which fills the alveoli in catarrhal pneumonia. These cysts were no doubt formed by inflammatory adhesions of the deeper portions of the pilations of the mucous membrane, in this way forming ducts running parallel with the tubes; they are best appreciated by a glance at the slide under the microscope. The muscularis is found filled with giant, epithelial and round cells, giving us the typical appearance of chronic diffuse tuberculosis. Sections made from the fimbriæ show the tubercular process there. The os abdominale fimbriæ is stenosed, being

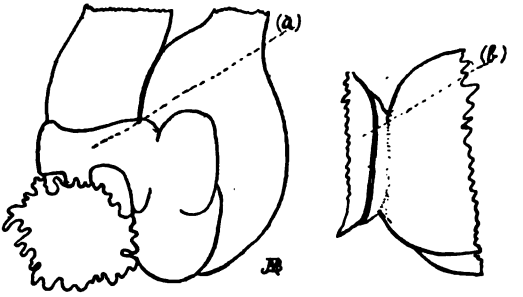


FIG. 2—(*a*) Diagram of small growth as it arises from the left tube ; (*b*) shows its anastomosis with the fimbria ovarica.

filled with caseous material, and the pilations are filled with miliary tubercles. One section of the tube, which included a portion of the broad ligament, shows cross sections of twelve or fifteen tubules running parallel with the tube. These tubules are lined with low, columnar epithelium and are each surrounded by a small band of plain muscle fibres. We have here no doubt the tubules of the epoöphoron (parovarium). *The small growth* is caseous in the centre and its walls are masses of epithelial cells in which are found numbers of large multinuclear giant cells.

The ovaries are normal in size; there are nodules visible on the surface. The right ovary has a nodule about the size of a bean, which is clearly shown in outline. Microscopic examination of the right ovary shows the nodule described to be a conglomerate tubercle whose center is caseous and the surface covered with large epithelioid cells and giant cells.

The uterus is normal in size and external appearance. An incision in the median line reveals the uterine cavity completely covered with caseous granulations, which on the cut surface are seen to extend to the muscularis. There is a clear line of demarcation between the granulations and the muscularis. Microscopic examination shows the mucous membrane almost completely replaced by tubercular granu-

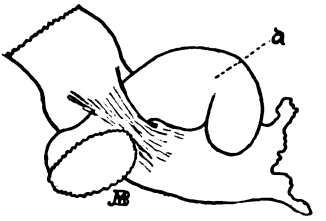


FIG. 3—(*a*) Diagram of small growth as it arises from the right tube.



FIG. 4—Copied from Quinn's Embryology, showing (*a*) stalked hydatid of Morgagni; (*o*) ovary; (*e*) epoöphoron (parovarium).

lation tissue, there is little caseation, but everywhere large multinuclear giant cells surrounded by epithelioid cells. The few uterine glands remaining are filled with tubercular tissue. The muscularis is normal, except for a slight amount of round-celled infiltration in that part adjoining the tubercular tissue.

The peritonæum. Although we cannot demonstrate the peritonæum here, yet we have slides from a conglomerate tubercle removed from

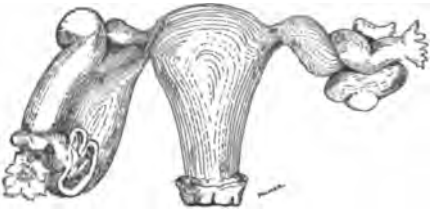


FIG. 5—The unlettered drawing shows a posterior view of the uterus, tubes and ovaries with left tube in position.

the peritonæum of the small intestines; these show the typical conglomerate tubercles.

Diagnosis. I believe we have to deal with primary tuberculosis in the pelvic peritonæum, which extended through the os abdominale fimbriæ to the tubes, from the tubes to the uterus and along the fimbria ovarica to the ovaries. The small growth which you see here on the left tube, might be tuberculosis of the lymphatics, of the

epoöphoron, of the paroöphoron or a conglomerate tubercle of the peritonæum or of the stalked hydatid of Morgagni. I believe it too regular, and both sides too similar in outline to be in the lymphatics; I have shown the tubules of the epoöphoron to be normal; it is not in the position of the paroöphoron, which should be between the epoöphoron and the uterine end of the ovary. It is too regular in outline and too complicated to be left to the laws of chance to be a conglomerate tubercle of the peritonæum, so I believe it to be tuberculosis of the hydatid of Morgagni.

The *second case* is a specimen of multiple fibromyoma of the uterus with myosarcoma of the broad ligament. In the body of the uterus may be seen ten or more tumors of various sizes, varying from about three millimeters to two centimeters in diameter. These tumors are very hard, incompressible masses. The cut surfaces showing white islands surrounded by yellowish streaks. The tumors lie in different positions in the walls of the uterus; some are subperitonæal, some intramural, others submucous. A section for microscopic examination was made from the largest tumor This shows areas of dense, pure white, fibrous tissue, with very few spindle-shaped nuclei among the fibers. Between the fibrous areas are small areas of plain muscle fibers. There is also a tumor in the broad ligament, as you see, about ten centimeters across and about two in thickness. On section, it is perfectly smooth and homogeneous and of a dirty white color. Microscopic examination shows it to be a purely cellular mass composed of long spindle-shaped cells with oval or rod-shaped nuclei. These are plain muscle fibers Between the fibers are a great many cells with an irregular large nucleus which takes the nuclear stain less darkly than the muscle fibers. They are embryonic connective cells. There are a few areas of fibrous connective tissue.

Diagnosis is fibromyoma of the uterus which has undergone malignant changes resulting in a myosarcoma of the broad ligament.

Tubercular Pyosalpinx.

Dr. HENRY T. BYFORD: I brought these specimens here as supplementary to the report made by Dr. Martin. One represents a case of tubercular pyosalpinx, and the other tubercular salpingitis with tubercular peritonitis. In the first case the tube was distended to the size of a goose-egg or a little larger and looks like an ordinary pyosalpinx. That of the other side, which I believe was not examined for tuberculosis, shows an ordinary interstitial salpingitis. The ovary

contains cysts and inflammatory conditions of the connective tissue due to peripheral oöphoritis.

The other specimen is very characteristic of tuberculosis. Here we have a pus tube, thickened, enlarged and bent upon itself. This happens to be the shape of the letter S. The fimbriated end is closed but the fimbriæ are still visible. It is much thickened and there is some fluid in it. There were a great many tubercles upon the tube and intestines and several pints of ascitic fluid free in the peritonæal cavity. The other tube is similar but not quite so large It was found that the mucous layer was also infected with tuberculosis.

The cases illustrate two different conditions. The case of pyosalpinx occurred in a woman twenty years old who had been married less than a year and who had not had many symptoms before she was married, if any. After marriage the only symptom was profuse menorrhagia, which could not be accounted for in any other way than by the enlarged appendages.

I operated by vaginal section. This apparently was an old pus tube which had been present before the patient was married, but had caused no symptoms and exacerbations until after she was married.

The other case, as a contrast, was that of a woman thirty-five years old, who had had an attack of pneumonia three years ago. She recovered and was in comparatively good health until last spring, when the abdominal fullness began. It increased rapidly within two or three months. At the end of five months an operation was performed and the abdomen was found to be full of ascitic fluid. The extensive deposits upon the peritonæum were apparently recent and would indicate, considering the extensive pathologic changes that were found in the tube, that it was an old case of tuberculous disease of the appendages with subsequent involvement of the peritonæum.

Experimental Research into Surgical Shock in Abdominal and Genito-urinary Operations.

By George W. Crile, M.D.

(See page 265.)

Discussion.

Dr. Weller Van Hook: A most important part of the practical bearing of Dr. Crile's researches will be in pointing surgeons with almost mathematical accuracy to those regions of the body which can be

manipulated fearlessly and to those whose irritation will result in extreme shock. Many of the results he has referred to this evening correspond with those that have been obtained empirically in work done heretofore. For example, cutting of the spermatic cord has been regarded always as a kind of surgical manipulation that would result in surgical shock. I would ask Dr. Crile what effect a little traction, but not long continued, upon the mesentery would have in operating upon the intestines.

I would ask also how he explains the variations in the sensibility of the peritonæum from below upward.

While we are stimulated by this research to conclude all of our surgical work as rapidly as we can, I cannot help feeling that Koenig was right when he said some two and a half years ago, in an article published in the *Centralblatt fuer Chirurgie*, that in practical abdominal work there is a tendency nowadays to exaggerate unduly the amount of shock that is produced; not that shock is not readily produced but that under our improved methods of abdominal manipulation the degree of shock which is reached is not so dangerous as some would have us imagine. This has a practical bearing upon the subject of intestinal suturing, a subject discussed in Koenig's article. It was then a question of whether we should introduce into the intestines gross, indigestible mechanical devices for the rapid reunion of the intestine, which would enable us to close the abdomen within a few minutes, or whether we should use sutures which would do the same work much more securely and with less danger to the patient permanently, but with some prolongation of the operation time. Koenig took what seemed to be a very reasonable stand in the matter, namely, that small knuckles of intestine may be operated upon extraperitonæally for a considerable time without a dangerous degree of shock. We must, therefore, steer a middle course, between indecent haste and extreme unwarranted slowness.

There is danger, it seems to me, in the over-preparation of patients for abdominal operations. The old method of freely purging a patient before operation by using saline cathartics has always appeared to me to be very dangerous practice. Blood pressure must be diminished in these cases at the time of operation and unless we are careful in this respect we are liable to train our patients so fine that when they come to operation they are in no condition to withstand shock-producing influences.

Dr. HENRY T. BYFORD: I would like to bring up one practical point in connection with Dr. Crile's paper. A large part of my sur-

gical work is in dealing with the peritonæum and I am a deliberate operator. I have had some experience in keeping the peritonæal cavity open for a considerable time and it seems to me the statement that operations should be done as hastily as possible when the peritonæal cavity is opened should be qualified to a certain extent. I have known many cases in which the peritonæal cavity remained opened as much as an hour with but slight reaction and with almost no difference, in the subsequent recovery of the patient, from a case in which the peritonæal cavity was not opened. It brings up the question: Can we not open the peritonæal cavity and protect the intestines so perfectly that prolonged operation upon a knuckle of intestine or upon the uterus, whatever the pathological condition may be, can be performed without getting much shock? I think we can.

Dr. ALBERT GOLDSPOHN: I would like to have the essayist express his opinion in regard to the comparative evil effects of traumatic injury and of air on the peritonæum. Some very excellent, and certainly conclusive, experiments have been made in Bern, Switzerland, by Walthard, as to the evil effects of air in destroying the squamous epithelium by drying it out; so that if two peritonæal surfaces have been acted upon by sterile air of ordinary dryness for twenty minutes, the length of time adopted in those experiments, and are afterwards placed in conjunction with each other within the abdomen they will adhere. The object of these experiments was to show what would produce adhesions and what would not; but the shock-producing effect of the air, incident to its drying and cooling effect, is considerable; and this subject comes right in touch with the one mentioned by Dr. Byford and is significant in regard to our technique. I believe Dr. Byford is right, that we can wall off the general peritonæal cavity from the atmosphere by moist gauze or pads and do careful, valuable work for our patients in a limited field for a considerable length of time, being in no hurry, and that the patients come out not only in a very satisfactory condition, but also with the work well and entirely done. It is possible to wall off the general peritonæal cavity usually and I think it is proper to do it, not simply on account of danger from infection but also because of the drying and chilling and consequent shocking effect of the atmosphere on the peritonæum. The experiments which have been made by pumping sterile air into the peritonæal cavity of animals—which can be done innocently—prove or disprove nothing as to the effects of the general free atmosphere on exposed peritonæum.

Dr. C. S. BACON: One of the singular results of the experiments

of Dr. Crile was that of the rise of blood pressure following manipulations upon the uterus. I wonder if the difference between this result and that which we quite frequently see clinically is due to the difference in the structure of the female uterus and that of the dog. The introduction of a sound into the uterus of a woman and irritation of the internal os so frequently produce symptoms of shock, that the absence of shock in Dr. Crile's experiments suggests that the human uterus is quite a different organ from the uterus of the animals used in the experiments. I would ask whether there are any experiments recorded to show whether the results given by the doctor would apply or not to the woman.

The experiments in the use of saline solution are interesting and suggestive concerning its use in sepsis. The immediate remarkable effect of saline solution in cases of sepsis may perhaps, judging from the results given here to-night, be due rather to an increase in blood pressure than to either a dilution of the poisons or to washing out of the poisons, according to the theory advanced by the French advocates of this measure.

Incidentally, in relation to the statement made by Dr. Crile that the hæmorrhage was increased after considerable quantities of the salt solution were used, I would ask him if he has had any experience with the use of calcium salts?

Dr. M. L. HARRIS: Shock is not only due to the manipulation of the intestines or of the splanchnic cavity, but to the particular kind of manipulation or irritation applied. Air itself is not an irritant particularly to the peritonæum. Wagner's experiments demonstrated this point. He injected into the peritonæal cavity of animals daily a large quantity of air and kept it up for thirty days without producing any disagreeable effect on the animals or the peritonæum. When the peritonæal cavity is opened freely and exposed to the air, the effect is due not so much to the air itself as to the loss of temperature and to a certain extent the desiccation or drying, likewise the manipulation. The peritonæal surface is constantly subjected to rubbing or to the touch of adjacent parts, and if we could manipulate them as gently we would get comparatively little, if any, shock. Shock, then, is due not simply to the fact that we are manipulating certain parts but to the character of the manipulation. That shock may be prevented to a certain extent by the use of cocaine is along the same line of Wedenski's experiments, which show that it is injury to the terminal nerve endings, both central and peripheral, to which shock is due. If temporarily either of the terminal nerve endings, central or peripheral, could be relieved

from action there would be no shock. If a peripheral nerve ending is entirely suspended in its action, any amount of manipulation may be made to that nerve ending without producing shock. Experiments have shown that the nerve itself is not injured in shock; that even after four to six hours excitation of a nerve, the nerve was not injured nor any of the other parts supplied by that nerve, provided the nerve endings were temporarily suspended in action. That is the way I would explain the effects of cocaine locally in preventing shock. One of the chief elements of shock is damage to the central nerve endings or the nerve centres. This has been shown by numerous experiments and these centres are affected inversely as we ascend from a low centre to a high one. The reflex centres are always the last to be affected while the higher centres, if we may use the term, are always the first to be affected in shock. The chief change in prolonged shock, not simply collapsed conditions, is due to changes in the nerve centres; and one very important point in this connection, which Dr. Crile did not mention, I think, is the local toxic condition which is induced by injury to these centres. If the centres have been injured, which they are by the severity of the shock sent to them, there is a local intoxication induced which it takes a long time to relieve. This would explain the failure of the suprarenal extract to produce any permanent effect. It stimulates muscles that are not exhausted in shock without relieving the nerve centres that are primarily at fault.

I agree with Dr. Byford that if the peritonæal surface be covered or protected by some material, the shock induced is not so great. I would explain the difference in degree of susceptibility of the higher and lower parts of the peritonæal cavity, or the area of the small intestine and the pelvis by the fact that the former is in direct connection with the solar plexus, which is more intimately connected with the cardiac or circulatory centres, while the latter pass to the hypogastric plexus, which is not so intimately associated.

There are a number of other points which are worthy of discussion but which I shall not dwell upon at this time.

Dr. FENTON B. TURCK: The work of Dr. Crile as presented to us to-night cannot fail to impress every one and it is unfortunate that we have not his complete work instead of his deductions upon which to make criticisms. In the first place, there may be in his other work that has not been presented here experiments recorded to show the relation between the blood pressure found in the arteries and veins of both visceral and somatic areas; for it has been previously found that with the increase of pressure in the veins there is simultaneous decrease

of pressure in the arteries. There has also been found an increased pressure in the visceral, especially the splanchnic, veins with a decrease in the peripheral. Before reporting the blood pressure it would be an advantage to state in what vessels the pressure was taken, especially to show the relation between the splanchnic and somatic areas. There is one important factor, which has not been presented to the extent I had hoped it would be, and that is the relation between the temperature of the body (especially that of the surface) and the blood pressure, possibly from some disturbance of the "heat centre." The loss of body heat may be explained by the withdrawal of blood from the surface with venous congestion of the splanchnic area. An essential point which has not been brought out in the experiments presented is the relation between the color changes of the viscera (stomach and intestines) simultaneously with the differences in blood pressure. It has been previously shown that there is a relation, in the production of shock, of an increased pressure in the veins and a decreased pressure in the arteries with a simultaneous change in the color of the viscera, including the enlargement of the veins running along the base of the intestines. Again it has been noted in the reduction of shock the changes of both pressure and color recur in the same order. Without further proof I would not like to accept the statement that the failure of the respiratory centre may be the chief causal factor in shock. The failure of respiration can be accounted for easily even when the circulation of the splanchnic area is clamped off, as the withdrawal of the circulation from this area would not exclude congestion of other areas and would result in respiratory failure. Where the respiratory movements are artificially induced, or by natural means, we would expect an increased negative pressure in the vena cava which with the "long traction" would assist the circulation much as it does normally. It may not be necessary to make the criticism, but there seems to be a discrepancy between the essayist's suggestive theory of the respiratory failure as the causal factor of shock and his therapeutic recommendations; they being the usual methods adopted for the restoration of the circulation by the use of vaso-motor stimulants and a reduction of the visceral congestion by forcing fluid into the emptied vessels. Another feature to which I wish to allude is the effects of the marked congestion in the splanchnic area being due to the fact that this area is supplied with the most powerful or most abundant vaso-dilating nerves emanating from the rami of the last three dorsal and the first two lumbar nerves, as found by Langley in 1889 and Hallion and Franck in 1896. This area so richly supplied by vaso-dilating nerves shows

great reaction to peripheral and central irritation, which may account for the great influx of blood to the splanchnic area. There has been no satisfactory explanation of what constitutes shock but these visceral vaso-motor changes are quite significant. The subcutaneous or intravenous injection of normal saline solution increases the volume, hence increases the circulation and thus overcomes the mechanical disturbance of congestion in mild conditions of shock; but it is wholly inadequate and dangerous in advanced stages. I note also that the essayist in his experiments fails to show the effect of other agents such as heat in the reduction of shock, its application at various degrees of temperature and the various methods applied internally and to the somatic area. The effect of heat applied upon the surface and in the splanchnic area is markedly different. The internal use of water of high temperature (55 to 60° C.) acts as a powerful stimulant. To prevent injury to the mucous membrane of the stomach from the high temperature and to control the flow, the hot water is introduced through a tube into a thin rubber bag inserted into the stomach. The hot water at such a high degree of temperature placed within the splanchnic area acts directly as a vaso-motor stimulant and indirectly upon the heart. The heated blood travels from this area to the periphery, stimulates the heart and lastly dilates the contracted peripheral arterioles, thus reducing the most important pathological conditions found in shock.

Dr. ALEXANDER H. FERGUSON: It is very late, Mr. President, and the subject of shock is such an interesting one to me that I should like to have it continued for another evening. I should like to take a little more than ten minutes to discuss surgical shock. It has been a subject of great interest to me for a number of years; I have had to deal with it a number of times. I wish to compliment Dr. Crile on the able manner in which he has presented this subject to us from a physiological standpoint. No one, who has not performed physiological and surgical experiments, can fully appreciate the amount of time and pains it has taken the Doctor to pursue these investigations.

Dr. A. J. OCHSNER: A few weeks ago I had the pleasure of examining the apparatus with which Dr. Crile made these interesting and valuable scientific experiments, and to study his original plates. From the few reproductions which we have seen to-night one cannot get an adequate idea of the enormous amount of work the Doctor has devoted to this subject. His experiments have extended over a long period of time, and it would take many days to study the original plates carefully.

Dr. Crile is certainly to be complimented upon the selection of his subject for experimentation, for it is one of enormous practical importance. I will not discuss the different features of this scholarly essay, owing to the lateness of the hour, but will dwell for a moment upon two conclusions which are certainly borne out by clinical experience and have been sorely neglected by two distinct classes of surgeons. One class has prided itself upon reckless speed, operating against time.

These men have neglected a surgical principle which Dr. Crile has shown experimentally to be of great importance, namely, that shock occurs to a greater or less extent, according to the character of the tissue or viscus which has been manipulated and according to the severity of these manipulations.

Surgeons who operate with reckless speed are bound to neglect this principle; they manipulate too many tissues with too great severity. Of course, a great degree of dexterity, skill and judgment on the part of the surgeon reduces the time of the operation without increasing the severity and extent of the manipulations and consequently reduces shock.

Dr. Crile's experiments have further shown positively that, other things being equal, a certain amount of manipulation gives rise to a much greater amount of shock after the animal has been subjected to an anæsthetic for a considerable period of time. This principle has been sadly neglected by the surgeon who has no regard for time. By exposing his patient to an operation of two or three times the necessary duration, he is liable to increase the amount of shock and expose his patient to a great degree of unnecessary danger. These two principles are of the utmost practical importance.

It has always seemed to me most unfortunate for a patient to be under the care of a surgeon who manifests a tendency to what might be termed insane haste. On the other hand, the patient is equally unfortunate if he is in the hands of a surgeon who is subject to a form of imbecile deliberation.

Dr. HENRY P. NEWMAN: I would like to ask Dr. Crile a question or two. In clamping off the spanchnic area do you not include some nerve filaments or possibly larger nerve trunks, and do you take into account the effects of such trauma done by the forceps or clamps? In connection with the question asked by Dr. Byford, I would also ask if by using protectives over the intestines and important viscera we may not prevent shock to a large extent?

Many surgeons believe that we can. It has been suggested that the omentum, which is admirably adapted for protective purposes, should be used to cover the field of operation.

Dr. CRILE (closing the discussion): I wish to express my appreciation of the discussion of my paper. I felt sure that anything the members of this learned Society might say would be of great value, and I have profited very much by the remarks. In reply to Dr. Van Hook I would say that in sawing a bone whose periosteum had not been detached, there was, sometimes, slight alteration in the blood pressure and the respiration; but crushing, sawing or otherwise injuring a bone whose periosteum had been previously removed caused no effects at all. It is probable that clinicians in attributing certain phenomena to the sawing of bone confused the effect of cutting the nerve trunks, which would be manifest at about the time a rapid operator would have proceeded to the sawing of the bone.

Isolated manipulation of the intestines did not cause so great an effect as a more extended manipulation. Each part of the abdominal cavity seemed to control a certain vascular area which first responded —a local vaso-motor mechanism—so that isolated manipulation, unless continued for some time, would cause only its proportionate amount of shock.

As to traction of the mesentery, if considerable it sometimes caused marked changes in the blood pressure due to the mechanical effect upon the large venous trunks. Gentle traction seemed to have but little effect. It was difficult, however, to separate the effects of traction from those of contact.

As to giving a definition of shock in a few words, I fear I shall not be able to do so. Shock, as is currently used, is the combined result of a number of factors; among them, the vaso-motor, the cardiac and the respiratory. In some operations, the one factor is more pronounced; in other operations, other factors are. In operations in the larynx, the respiratory and the cardiac factors are most pronounced; likewise so in operations in the brain. In operations on extremities, the vaso-motor and the cardiac factors play a greater part; in operations on the thorax, the respiratory and the cardiac; while in operations on the abdomen, the vaso-motor and respiratory. The old principle laid down by Sir Astley Cooper, "action leads to reaction and rest to restoration," if applied to the various physiological functions of the organs of the body, fairly well expresses the manner of producing shock. The whole subject requires extended discussion to show the truth of this statement.

In assigning a cause for the difference in the amount of shock produced in the different portions of the abdominal cavity, it is necessary to remember that the vessels of the splanchnic area serve as a

compensatory factor in maintaining the equilibrium of the blood pressure. It would be natural to suppose that in that part of this area in which vessels and nerves were most richly supplied, a disturbance would be attended by a greater effect upon the circulation than in other parts not so richly supplied; and this is true in the different parts of the abdominal cavity. The small intestines, with their mesentery, are more richly supplied than the large intestines or the stomach.

The amount of cocaine administered was usually 1-1000 of a grain to the pound of animal.

With reference to the relation of temperature to shock, I have been unable to add anything new on this point. Clinicians and physiologists are agreed that a proper temperature is more favorable to the subject, that there is a lowered temperature in shock and that heat artificially supplied is beneficial.

As to the effect of morphine I am inclined to believe its good effects, clinically observed, are largely due to its allaying the psychic element of shock; this, of course, I could not investigate on animals.

With reference to Dr. Byford's question, I think he is entirely right in believing that the peritonæal cavity may be so protected that a surgeon may carry on manipulations in a small area for a considerable time without causing much shock. I have shown this in a number of experiments. It is true that in such instances a very considerable degree of tolerance may be acquired. It is well to bear in mind that the anæsthetic factor is in operation continuously and the respiratory centre is continuously receiving afferent impulses which affect it.

With the reference to using the omentum to protect the intestines, exery experiment in which this was tested showed its propriety. When the omentum is first placed over the intestines and then gauze pads placed upon the omentum, but little shock is produced. My remarks with regard to time were meant to imply that ideally the less time consumed in the manipulation, the less the shock; the less the area of contact, the less the shock.

With regard to the remarks of Dr. Goldspohn, I am not prepared to say what the relative effect of air and of contact with the peritonæum is. Observations on this line were more or less relative and again much will depend as to whether or not the air was cold or hot and the amount of manipulation in question. I cannot answer the question more definitely.

As to Dr. Bacon's question, I cannot answer it definitely, as I was unable to make observations on that subject. In a general way, in no experiment was there a fall in blood pressure in performing operations

on the female genital organs, and in no case was there a rise in operations on the male genital organs.

In reply to the second question, I did not use the calcium salts. The reason why the blood does not clot so readily is on account of its dilution with the salt solution.

With reference to the point made by Dr. Harris as to the cause of the circulatory disturbance on contact with the air, I know of no way of explaining the phenomena. To say that desiccation or evaporation occurs is only to substitute other names. I beg to differ with Dr. Harris on the next point that shock is due solely to irritation or injury of the nerve endings. For the greater part the statement holds but profound shock may be caused by mechanical interference with large nerve trunks.

I am quite unable to understand the experiments referred to relative to denutrition of the nerve centres unless it is meant that the potential energy of the centre was used up; and if that were all that is meant to be conveyed, it hardly adds any new light.

In reply to Dr. Turck as to the relation of temperature and blood pressure, I have been unable to make any new observations on that subject. I tried high temperature in the stomach and rectum and, according to my records, not much effect was produced, aside from a sustained effect on the blood pressure and an increased respiratory action. Water in the peritonæal cavity, at a temperature above that of the body, caused marked acceleration of the respiration. This, if persisted in, tended to finally lead to exhaustion.

As to the change of color in the blood vessels, while this was always observed, it was believed to be due so largely to respiratory changes that not much importance was attached to it; so long as the respiratory action was not under a definite mechanical control but little could be said in a positive way about the results. There may be methods of making use of this relative factor, but I did not feel I could do so with safety in my experiments.

As to respiratory failure, it was so frequently observed that it was one of the features of the research.

With regard to Langley's experiments, I am inclined to think that the work of Moll, showing that the splanchnic nerves are vein nerves and control the capacious splanchnic area, is of more importance as bearing upon the subject.

Dr. Ochsner has very nicely presented the clinical side in comparison with the results of the experimental.

As to Dr. Newman's question, I think the Doctor misunderstood

what I meant by clamping the splanchnics; I meant clamping the splanchnic arterial supply and not the splanchnic nerves themselves. In the latter case, the injury would have been disastrous.

Emphysema of the Abdominal Wall after Laparotomy.

By Weller Van Hook, M.D.

(See page 298.)

Official Transactions.

S. C. Bacon, *Editor of Society.*

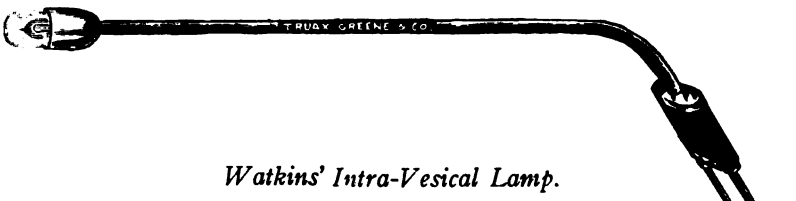
Stated Meeting, January 22d, 1898.

The *President,* Henry P. Newman, M.D., in the Chair.

Report of a Case of Incontinence of Urine.

Dr. T. J. Watkins: The woman is thirty-five years of age; widow; has never been pregnant. About ten years ago she gives the history of having had an acute pelvic inflammation which confined her to bed for a long time. Following this she had almost complete incontinence of urine which has lasted to the present time. Three years ago Emmet's buttonhole operation was performed; the urethral opening was left for some little time, and then closed, but her condition did not improve. I saw her for the first time about one year later; there was much scar tissue about the urethra; the anterior vaginal wall was much shortened, presumably as a result of the pelvic inflammation. The uterus was prolapsed; and thickening existed in the region of both of the uterine appendages. It was believed at that time that the incontinence was due to shortening of the anterior vaginal wall which produced traction on the neck of the bladder. Under narcosis, I separated the anterior vaginal wall from the cervix, and I also separated the bladder very freely from the uterus; I then sutured the incision, inserting the sutures parallel to the line of incision so as to lengthen the anterior vaginal wall and force the cervix upwards and backwards, to relieve the traction on the neck of the bladder. At the same time, I made lateral denudation on each side of the urethra and

sutured so as to make the tissues more tense across the urethra. The patient was kept in bed two weeks, and during this time had complete control of her urine. When she got up the urine escaped about as freely as before operation. Six months later she was again admitted to the hospital, when she was seen in consultation by Drs. Frankenthal, Rumpf and Ries. Cysts of considerable size had developed in the region of the uterine appendages. Vaginal hystero-salpingo-oöphorectomy was performed. The uterus was large and adherent and double tubo-ovarian cysts were present. The urethra was lengthened by denudation and sutures and two silver wire sutures were passed, at the suggestion of Dr. Ries, around the urethra and tightened down on a small glass catheter placed in the urethra. Following this operation the patient had some control of her urine, but on getting up the urine escaped as badly as before. Four or five months later she was again operated upon. At this time I used buried silver wire sutures; the first one I put about the neck of the bladder. I made an opening to the left of the urethra near the neck of the bladder and then forced my finger around the neck of the bladder. A heavy silver wire was carried through this canal by means of a curved silver probe, and firmly twisted down upon a glass catheter placed in the urethra. A buried silver wire was also placed about the urethra. The patient had control of her urine as long as she remained in bed, but following this the urine escaped as badly as before. The two silver wires are in place and cause no trouble. Only a small catheter can be passed through the urethra.



Watkins' Intra-Vesical Lamp.

Dr. T. J. WATKINS: The instrument consists of a small electrical lamp placed on the end of a small metallic tube. The instrument is used as follows: With the patient (a female) anæsthetized and placed in the knee-chest position the urethra is dilated and a No. 12 Kelly's urethral speculum is inserted. The lamp, connected to an ordinary cautery battery, is carried through the speculum into the bladder. If the patient's abdomen is free from constriction and the muscles relaxed the air passes through the speculum and balloons out the blad-

der. The lamp, which generates very little heat, illuminates the entire cavity of the bladder. By means of this instrument the interior of the bladder is very easily observed, and the ureteral orifices readily found. The advantages it has over a reflected light are:

1. The entire cavity of the bladder is illuminated.
2. A dark room is not required.
3. It does not require extensive practice to use it satisfactorily.

Dr. M. L. HARRIS described a

New and Simple Method of Obtaining the Urine Separately from the Two Kidneys.

DISCUSSION.

Dr. F. HENROTIN: I have seen Dr. Harris use the instrument he has described, and I regard it as one of great value. It is going to simplify the work for the particular purpose for which it is devised. It will do away with the use of the cystoscope in a large proportion of cases. I have had occasion to know of the instrument being used in a woman with only one kidney, one of the little tubes remaining entirely dry, while the other kept dripping the urine just as it came from the ureter, showing to all appearances that the instrument is perfect. I have seen it used in one instance where blood was obtained from one side and none from the other. In this case there was pyonephrosis on one side, and it was a simple matter to collect the urine from each kidney. It is an instrument that will revolutionize the particular question of being able to differentiate the condition of one kidney from the other, and I have no doubt will be adopted the world over.

A New Perinæorrhaphy and Posterior Colporrhaphy.

BY FRANK T. ANDREWS, M.D.

(See page 283.)

DISCUSSION.

Dr. JOSEPH B. BACON: Dr. Andrews was kind enough to invite me to see one of these operations. It is the only operation for incomplete laceration of the perinæum with rectocele that I have ever seen that would relieve the condition permanently and according to the original anatomical relation. I was delighted with the operation after I saw him do it. It is easy of performance. The ordinary operations

for the correction of rectocele, removing the posterior vaginal wall, then cutting loose the connective tissue fibres and the radiating fibres of the levator ani muscle and sewing them together, again uniting them in relations that are not normal have, in my experience (and I have followed the cases for many years in assisting different gynæcologists of Chicago), been failures. Many of the cases were relieved and benefited for a time but the operation, as a rule, has resulted unfavorably. In Dr. Andrews' operation all of the essential tissues are left intact. With this operation he anchors firmly up to Douglas' pouch, to the recto-vesical fascia, so that the parts are sustained by the broad ligaments and the tissue between the rectum and the vagina, that we usually cut in the old form of operation, is left intact and hung up permanently to this fascia, and the circular fibres of the levator ani of both vagina and rectum are also attached and the connective tissue between the rectum and vagina is also anchored firmly above. I consider this an ideal operation. It is one that has come to stay. It is an operation that fulfills all the indications for that troublesome class of cases, and I have no doubt but what it will prove to be valuable in many of the worst forms of cystocele. There are some cases probably where it will not be successful. After seeing the operation done and having given it a good deal of thought, I am thoroughly convinced that it is one of the most complete operations for the relief of this trouble that we have, and personally I am thankful to Dr. Andrews for having devised and presented this method to us.

Dr. HENRY P. NEWMAN: I would like to ask Dr. Andrews if the operation restores the normal relations of the structures composing the pelvic floor, preserving the anal fold and vaginal curve. It is well known, as shown in one of the illustrations here, that the levator ani muscle has its origin in the inner anterior portion of the pelvis and comes down backward (indicating) like a sling to support the vagina and rectum. The question occurs to me whether, in drawing up the rectal wall or the posterior half of the pelvic floor in this direction, you do not in a measure draw this half away from its original attachment, which is forward toward the symphysis pubis. I would like to have that point demonstrated because it is an important matter in connection with any operation for restoring the perinæum.

The procedure is a very unique one; it shows great ingenuity on the part of Dr. Andrews and I must compliment him for making his illustrations so plain. The majority of plastic operations presented to the profession are so meagre in their descriptions and illustrations that it is with a good deal of difficulty that they are performed or duplicated.

Dr. REUBEN PETERSON: I have been very much interested in Dr. Andrews' paper. I have always found it exceedingly difficult to gain a fair idea of a perinæal operation from diagrams. I wish to compliment the Doctor upon giving us such a clear description of a new perinæal operation. It is one of the best I have ever listened to. I would like to ask Dr. Andrews what becomes of the levator ani muscles which in the majority of cases of perinæal tears have been torn? The object of the Emmet operation is to restore the torn levator ani muscles and fascia on either side. It seems to me that while this operation will draw up the rectocele or will overcome it, it does not go high enough up into the angles and consequently the levator ani muscles are not restored as they should be. In his method of denudation the Doctor speaks of introducing his forefinger under the mucous membrane and passing it up until he is behind the cervix. In denuding the cicatricial tissue on either side of the pelvis where the tears have been, I have encountered considerable difficulty in doing it in the way the Doctor speaks of. It is quite easily done if we make the denudation as he does near the central line, but if we go out where the tears have occurred, that is in scar tissue, I doubt very much whether we can denude as easily as it is described in his paper.

The method employed in doing away with the rectocele, the straightening out of the anterior wall, is very ingenious, and surely will be a help to all of us, because after completing the Emmet operation, changing it to suit the case, we often have a certain amount of rectocele remaining. This rectocele in the majority of my cases has not been marked and has not given rise to trouble if the torn levator ani muscles on either side have been properly restored.

Dr. C. S. BACON: I can only repeat the question that Dr. Peterson has asked. I understand that the operation described, with the exception, of the retraction of the rectocele by the crown stitch, is practically the same as that of Hegar, which does not succeed in getting hold of the retracted ends of the levator ani muscle and the torn fascia. Without that and a reunion of the torn muscles on both sides a permanent closure of the pelvic support cannot be made.

Dr. JOHN T. BINKLEY, JR.: The question asked by Dr. Peterson, and referred to by Dr. Bacon, is one that naturally arises regarding the torn ends of the levator ani muscles. Every operator who attempts to restore a perinæum by suturing the mucous membrane of the vagina will fail if he does not apply his satures so as to engage the deeper tissues. To do this it is necessary to direct the needle in such a way as to include a deep bunch of fibrous tissue while continuing to stretch

the side of the levators. So far as Dr. Peterson's reference to the denudation not being high enough laterally is concerned, Dr. Andrews plainly states that he goes as high as the description of Emmet's operation recommends in lateral denudation of the carunculæ on either side.

I congratulate Dr. Andrews upon his unique method and, from my conception of it, it appears to be a most eligible and desirable operation in many respects.

Dr. F. HENROTIN: I would like to ask Dr. Andrews if in cases of anteflexion with retroversion it does not tend to accentuate the retroversion of the uterus by lifting up the cervix. We know how difficult it is to understand operations from descriptions and diagrams. It takes a long time to study them, and we have to think over them a good deal before we are able to do them.

Dr. T. J. WATKINS: I am very much interested in Dr. Andrews' operation. It is true that Emmet's operation does not perfectly restore the recto-vaginal wall from the crest of the rectocele to the cervix. The fact, however, remains, I think, that Emmet's operation when properly performed nearly or always gives satisfactory results in cases of rectocele. The operation of Dr. Andrews I have no doubt has a good many advantages. I believe this, not because of the principles upon which the operation is based, but because I know Dr. Andrews is a careful and conscientious observer. Theoretically, I do not like the operation. Observation of the operation may remove the theoretical objections as I have not had the opportunity to witness the operation. The principle of the Emmet's operation is, as you know, to restore the perinæum to its normal location underneath the pubes It does not make any difference about the size of the perinæum; its location is the only important consideration. It would seem that this operation would not restore the perinæum to its normal location as well as Emmet's operation.

In nearly all cases of large rectocele the uterus is prolapsed and retropoised. I would like to ask Dr. Andrews if his operation would have any tendency to increase these conditions; that is, if the purse-string suture would not increase the prolapse and if the pad of tissue placed behind the cervix would not increase the backward displacement.

Dr. ANDREWS (closing the discussion): Dr. Bacon made one statement that I feel like controverting, namely, that by drawing this tissue back by this thread (indicating), put in a position so that the broad ligament is drawn upon it, it helps to sustain the parts. That

is not true. If any ligament is drawn upon, and in some measure shortened by the traction, it would be the sacro-uterine ligament. But there is no effort to draw upon any one of the ligaments. The ligaments have not sufficient strength to prevent prolapse. The supporting elements are the levator ani and its fasciæ.

All of the discussion, from the time Dr. Newman mentioned the position of the rectal fold up to the remarks of the last speaker, emphasizes the value of the levator ani and its fasciæ as supporting elements. It is difficult to answer these questions without going into detail. For instance, in considering the disposition of the rectal fold, and the question of what the position of the posterior vaginal wall may be after this operation, you must remember that you cannot conceive of this operation by figuring on a plane cut through the field of operation. You must consider it in its real relations; you must appreciate the fact that the pelvic floor is a bowl, and not a curved sling. It is a bowl with an opening through it for the passage of the vagina, the rectum and the urethra, and as these canals go through this opening they receive the fibres from the levator ani muscle, and the connective tissue of these muscular walls receives fibres from the fascia, so that if you have a section of the levator ani muscle and you see the point where the rectum goes through it, in this way (illustrating), the fibres from the fascia, both above and below the levator ani, pass into and become a part of the walls of the rectum. The same is true of the vagina and of the urethra. Here (indicating) we have a bowl that in case of a woman who has borne children ceases to be a shallow bowl; it becomes a funnel-shaped bowl. The uterus can lie in a shallow bowl in this position (indicating normal anteflexion), but it is difficult for it to lie in a funnel-shaped bowl in this position, because the tendency is for it to go down, because of the displacement of the pelvic floor that holds the uterus in place. In drawing the posterior wall of the vagina backward by this stitch we obliterate this fold temporarily; we draw the posterior vaginal wall backward and upward. But having accomplished the denudation and having drawn the parts back in this position, by putting deep sutures through from side to side we narrow the opening through the levator ani. The narrowing of this opening is equivalent to shortening the fibres of the levator ani and its fasciæ. Shortening these fibres elevates the pelvic floor and converts the levator ani funnel into a levator ani shallow bowl. Having an abnormal funnel shaped floor, by bringing the edges of the opening together we raise the central elements of the floor and bring it back to a normal position. Dr. Peterson asks if I am able to reach the torn

edges of the levator ani and fascia so as to bring them together with my sutures.

I will answer that, if any of the operations now in use does this, mine does. My denudation is as deep as Tait's, and as extensive laterally as I choose to make it. In practice I make it very wide.

When an ordinary Emmet operation is done with a pair of scissors with which we clip away strips of membrane, one after another, we make a shallow denudation; we barely get through the mucous membrane. We have not made a deep denudation. In making this denudation I slide the finger right under the whole of the mucous membrane and the amount of tissue I will strip from the floor is considerably more in thickness than we take off in an Emmet operation. I have found no difficulty in going as far laterally as I want to. My finger will slide up anywhere I want it to go unless I am dealing with a case that has been operated on before; then we are apt to run across a patch of hard cicatricial tissue that we cannot get through with the finger, and we have to work with a handle of a knife or something of that kind. Furthermore, these hooks mark the same points in the mucous membrane that they do in the Emmet operation. The operation I have described denudes the whole floor of the vagina and as much of the lateral walls as you want, and you can make a vagina not larger than a lead pencil if you wish. The extent of the denudation is fully as great or greater than in the Emmet operation.

Dr. Henrotin asks whether it increases the prolapse. It does not, because it pushes the cervix upwards and backwards; it obliterates the rectocele, which is one of the causes as well as one of the results of prolapse.

If there is a retroflexion you restore the uterus to its normal position first, crowd the cervix upward and backward, and the tendency is for the uterus to stay in its normal position; but a large proportion of perinæorrhaphies done by this or any other method will not result in complete restoration. It will give you no certainty that the uterus is going to lie in normal anteflexion. Patients come to me that have been previously operated upon by surgeons and they have retroflexions and retroversions still. I have no doubt some of my cases go to other operators who find retroversions and retroflexions. If what I am telling you were not true you would not be doing anterior fixations nor Alexander operations. These procedures would be wholly unnecessary. To sum up, this operation does not increase prolapse, but diminishes it. It does not increase retroversion, but cures it. But, unfortunately, neither this nor any perinæorrhaphy yet devised will cure all cases.

Dr. HENROTIN: I want to know whether it does not tend to increase the flexion or whether it does not accentuate the retroversion?

Dr. ANDREWS: I do not exactly understand the question.

Dr. HENROTIN: Don't you think by pushing the parts up under the cervix it will accentuate the retroversion?

Dr. ANDREWS: No, sir. The push is in this direction (indicating upward and backward). You must get rid of the fundus behind before you push anything.

Dr. HENROTIN: If you crowd in behind the cervix do you not accentuate the retroversion?

Dr. ANDREWS: Nothing is crowded in behind the cervix. We put the bunch of tissue under the cervix. The passing of the sutures pushes the cervix upward and backward. Every time we pass a stitch we draw this opening in the levator bowl together, and lift the floor. If you do an Emmet operation it does the same thing.

Dr. Watkins says that the Emmet operation restores the parts to their normal relations. What I have just said would indicate that that is not true. There is no such thing as restoring the torn parts to their normal relations. The parts are not simply torn. If they were simply torn we would denude and close as in a recent laceration. But we have other conditions to deal with, namely, rectocele—cystocele—prolapse, etc. Most of my work in this line is done in a hospital on poor patients. They do not come to the hospital until they are compelled to by severe backache, left-sided intercostal neuralgia, occipital headache, constipation and irritable bladder. I get cases of rectocele that are very pronounced and in these cases the operation must necessarily be extensive.

Adhesions of the Female Prepuce.

BY C. S. BACON, M.D.

(See page 278.)

DISCUSSION.

Dr. JOHN T. BINKLEY, JR.: The paper of Dr. Bacon has been a very interesting one to me and recalls some cases I have had under observation. I would like to ask Dr. Bacon one or two questions. He seems to have kept records of several cases and to have looked into the literature of the subject. Have you found, Doctor, in the older cases, nausea as one of the symptoms? I have under observation now

a patient, fourteen years of age, in whom nausea is one of the principal symptoms. Within a year I have had the case of a working girl, eighteen or nineteen years of age, in whom nausea was also one of the chief symptoms. I have seen no good results from amputation of the clitoris. I have done this operation once and have known it done in one or two other cases, without effecting a cure. I would like to ask the Doctor if he has found cures in the literature of the subject from amputation of the clitoris.

Dr. TAYLOR, of Oakland, Cal. (by invitation): I have had some experience in regard to the subject of this paper. I recall three cases of young ladies, whose ages were respectively eighteen, twenty and twenty-two. One patient had almost become insane from the habit and the clitoris had been removed, also the ovaries six months later, for the purpose of relieving her. But it occurred to me, after making some inquiry in regard to the source of irritation, that the pudic nerves were at fault. I immediately cut down and removed these and the girl was relieved and now, at the end of three years, she has had no return of the habit. In two other cases, instead of removing the clitoris and ovaries, I removed the pudic nerves on either side with the same results.

In each case the pudic nerves were enlarged to the size of the lead of a lead pencil. One of the patients was committed to an insane asylum. Three weeks after the operation the patient was rational and has remained so for two years and six months. The fact of these nerves being enlarged proves the source of irritation was from the pudic nerves.

In looking up the literature of the subject I found that Dr. Joseph Eastman had previously performed the same operation with the same result. Of course these cases are not large enough in number to say there would be good results in all cases. In these instances there has been no return of the habit whatsoever.

Dr. E. L. LOBDELL: In April, 1896, I was consulted by a physician from a neighboring State about a patient who among other symptoms, nervous in character, was subject to this practice. In brief her history was: American; æt. 26; occupation, school teacher. Had taught since fifteen years of age, from nine to eleven months of each year, and had been subjected to walking long distances in bad weather. Had never had any serious illness. After the first year menstruation was regular, sometimes painful. No family history. When a child the girl had been taught the practice by a companion but later discontinued for several years. About seven years ago, having overworked

herself, the habit recurred and increased in intensity, passing beyond control of patient. She became correspondingly melancholy and finally attempted suicide because of her inability to restrain herself.

She finally consulted the physician who obtained these facts. I suggested camphor monobromate, light diet and long walks until physically fatigued.

By June, no improvement being made, her physician requested me to see her and brought her to the city. I found her highly intelligent, poorly nourished, energetic and over-sensitive about her condition. Examination impossible without an anæsthetic. This given, found labia majora and minora adherent almost throughout their extent. The clitoris was elongated about an inch and a half from base to apex; very tense; prepuce in redundant folds adherent to the tip and evidence of an early intense vaginitis. No pelvic disease seemed to exist.

Letting the patient come from under anæsthesia I told her what I would do, but would not guarantee results.

The following day, without an anæsthetic, I broke up the adhesions of the clitoris, then burying the point of the knife at the base of the clitoris I made a deep incision outward and downward at an angle of about 45° through the pudic nerve. This on both sides. There was free hæmorrhage and intense pain, though less than a minute was required to do both. Ice compress to vulva for two days, rest in bed and light diet.

It has now been two years. Patient writes she is very well; no recurrence of impulse. Once, about six weeks after operation, she had a slight return of impulse but changed occupation and it passed away. She has gained in weight, resumed social duties and former occupation.

I cannot say whether the operation itself was effective or whether the mental effect produced by the operation was the efficient cause.

Dr. BACON (closing the discussion): I am well aware that this is a subject which is difficult to handle on account of its nature and its history. I suppose most of you are familiar with the sad history of the operation of clitoridectomy done by Baker Brown. He was one of the most ingenious and eminent surgeons of London and enjoyed the friendship of the prominent gynæcologists of this country and Europe. Finally he conceived the idea that masturbation was responsible for many of the nervous and mental diseases of women, and he also concluded that the most important cause of the habit was irritation of the clitoris. This led him to do the operation of amputation of the clitoris, which he carried to such an extent that it resulted in his expulsion from the London Obstetrical Society. This expulsion

caused the loss of his practice and finally he became a subject for the charity of his colleagues and died a pauper.

The entire subject of masturbation in the female is one in regard to which it is exceedingly difficult to get any facts upon which to base any scientific conclusions; but still it is admitted by all who have given any attention to this subject that it is an important one, and the practice itself undoubtedly leads to very serious nervous disturbances. The cause of the practice, however, is a subject of very great diversity of opinion. That it is in very many instances entirely psychical there is no doubt. A neurotic individual or insane person may contract the practice simply because of the mental or brain disease. On the other hand, some of the cases in which cures have been reported show that the peripheral source of irritation is of importance. Adhesions or irritations of the clitoris are not the only cause; very often vaginitis is the cause of the trouble. Vaginitis may arise in various ways; from an irritating condition of the urine, for example, in diabetes, or from irritation proceeding from abnormal bowel discharges. Such sources of irritation lead to the formation of the practice. In fact the pudic nerve, as we know, has perinæal branches which may be the tract of the afferent impulses, as well as the clitoridal branches. There can be no doubt there are a number of cases where irritation of the clitoris is the important fact. This I think is generally admitted, and this source of irritation in the female is probably greater than irritation of the prepuce in the male. If there is any reason for the practice more or less common nowadays of removing adhesions in the male, if necessary by circumcision or by a splitting operation in the prepuce or, in the great majority of cases, by separating the prepuce so as to prevent future trouble, that reason exists to a greater degree in the case of the female. That was the chief object of my paper in calling attention to the subject.

In answer to the question of Dr. Binkley in regard to the symptoms of masturbation, I would say that I have often seen nausea one of the symptoms.

As to the other operative procedures besides that of simply separating the adhesions, division or exsection of a portion of the pudic nerve seems to be justified in such rare cases as quoted by Dr. Lobdell and by Dr. Taylor. Amputation of the clitoris is an operation that is very rarely, if ever, indicated. If the irritation is due to adhesions of the clitoris simply removing them completely is sufficient and we must remember that the perinæal and other branches of the pudic nerve may be the source of trouble; so that removal of the clitoris may not effect a cure even after this mutilating operation.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, January 11, 1898.

The *President*, W. GILL WYLIE, M.D., in the Chair.

Vaginal Fixation of the Broad Ligaments.

Dr. H. N. VINEBERG: I have two patients here to-night upon whom I have performed fixation of the broad ligaments to the vaginal wall. I expected to show a third patient but she has not put in an appearance. One of the women here to-night became pregnant four months after the operation and had an easy labor. The one which I hoped to show also became pregnant soon after the operation, and had no difficulty. I saw her a week ago, the uterus was then in good position and she was perfectly well. The second patient here to-night was operated upon in November of last year. When she first came under my care she was threatened with abortion at the third month, owing to the inability of the fundus to clear the promontory. By putting her in the knee-chest position, replacing the uterus and maintaining it in its proper position for the next fortnight, she went her full term. After delivery I introduced a pessary, but it failed to keep the uterus in anteversion, and as the patient was suffering a great deal, I proposed the operation to her. In this case, in addition, there was considerable prolapsus of the uterus, the cervix being just within the introitus, otherwise a marked cystocele and rectocele. The patient made a good recovery, and the uterus is now, in my opinion, in excellent position, being well up in the pelvis, and in normal anteversion. In all of these cases treatment by pessary had been tried without avail before operation was resorted to. In neither case was a pessary worn either after operation, or after the confinement and in each case the patient was up before the twelfth day. The one who is here to-night, and who became pregnant three months after the operation, got up on the fifth day after her labor, was at the washtub on the fourteenth day and has done her housework ever since, besides nursing her child. There could therefore be no severer test of the efficacy and permanency of the operation. I wish to call your attention to the small size of the

uterus in this case, evidently due to the atrophy of lactation, although the patient is in robust health. The uterus is only five and a half or six centimetres in length as measured by the sound. I have seen cases of lactation atrophy in which the uterus was only four and a half inches long.

Discussion.

The President appointed Drs. Cragin and Nilsen to examine the patients.

Dr. E. B. Cragin: I have examined both cases carefully. In the first the uterus lies in the axis of the vagina and I would hardly call it a perfect result, although the woman seems to be well so far as absence of symptoms is concerned. The result in the second case is very good indeed.

Dr. Nilsen: In the second case I call the anteverted position of the uterus exaggerated. In the first case the uterus, lying in the axis of the vagina, is extremely small. I would almost call it infantile. The woman is now nursing her baby and this may have a bearing upon the contracted state.

Dr. Vineberg: Let me say in explanation that in the first case examined the uterus to-night is not in as good a position as when I examined her a week ago, no doubt in part due to a full bladder. Besides the uterus is small and difficult to outline. The woman is very nervous and has thick, rigid walls. The reports of these gentlemen illustrate forcibly how each of us differs in our conceptions of the proper forward position of the uterus. The one gentleman finds fault because the uterus in the one case does not lie against the anterior vaginal wall; the other gentleman finds fault because the uterus does lie against the anterior vaginal wall.

Dermoid Cyst.

Dr. E. E. Tull: I removed this dermoid cyst, which is the size of a cocoanut, from a woman to-day. It was attached by a short pedicle to the right broad ligament. It was quite movable and easily felt in the vault of the vagina. She was examined a few days ago by an eminent surgeon of this city who, although he was told there was a tumor, failed to detect it. The case is reported to show the difference between the diagnosis of a general surgeon and that of the gynæcologist.

The Treatment of Retropositions of Uteri in Women Who may become Pregnant.

By J. H. Nilsen, M.D.

(See page 290.)

Discussion.

Dr. J. Riddle Goffe: In order to make the points at issue in this discussion as clear as possible, I may perhaps be pardoned if I express somewhat axiomatically my creed in regard to the normal position of the uterus, its natural supports, and the effects of its displacement.

First, I may be numbered among those who still recognize the fact that symptoms are produced by simple retroversion of the uterus even when that organ is free from disease.

Secondly, even if no marked symptoms can be traced to the displacement itself, the abnormal position will become sooner or later the cause of disease through interference with circulation and nutrition.

Thirdly, the normal position of the uterus is that of anteversion. Its principal support consists of a cradle or sling of tissue reaching from the symphysis pubis to the cervix in front and from the cervix to the sacrum through the medium of the utero-sacral ligaments posteriorly.

Fourthly, the position of the uterus in the pelvis under normal conditions is such that when the woman is upon her feet gravity will assist in maintaining an anteverted position of the uterus, provided the cervix can be held high in the hollow of the sacrum.

Fifth, the logical deduction to be drawn from these statements is that in cases of retroversion of the uterus the indications point to the restoration of a proper tone or length of the utero-sacral ligaments. Theoretically, indications point to some operative procedure upon the utero-sacral ligaments as the most rational method of maintaining the uterus in its normal position in cases of retrodisplacement. A number of prominent operators have suggested this procedure as a rational cure for retrodisplacements and have put it into execution. As yet, however, no method which has been appllied has proved practicable and the suggestion still remains in the field of experimentation. Doubtless it is not far distant when some enterprising gynæcologist

will gain new honors in suggesting some method of applying this principle practically, simply and successfully. In the meantime the structures which present themselves as the most feasible and natural supports for the prevention of retrodisplacements of the uterus are the round ligaments. The utilization of these structures for the relief of retrodisplacements of the uterus are no longer in the field of experimentation, but have established themselves as the most feaasible, satisfactory, and generally successful procedures for the relief of this unfortunate but common condition.

From my standpoint the question narrows itself down to the choice of method by which the round ligaments shall be shortened, viz., the Adams-Alexander operation by which the ligaments are shortened at their distal end; the Wylie-Mann operation, by which the round ligaments are shortened at their proximal end through an incision in the abdominal wall; the Vineberg operation, by which the round ligaments are shortened at their proximal end through a vaginal incision anterior to the cervix.

Of these the Alexander operation is the most widely used and, at the present time, leads in popularity. There are objections to it, however, the principal of which is that its field of application is very narrow, being restricted to cases in which there are no adhesions and in which the appendages are free from disease. This makes it applicable to a very limited number of cases. In my experience less than twenty per cent. of the cases of retroversion are properly candidates for the Alexander operation. The second objection is that the ligaments in some cases are unable to withstand the strain which is put upon them in endeavoring to restore the uterus to its position; they break and therefore vitiate the procedure. The percentage of cases which suffer from hernia due to the incision necessitated by Alexander's operation is not inconsiderable. Every operator who has a series of cases of any magnitude has suffered the mortification of having a certain proportion of them return for the relief of hernia due to the operation. Last and not least, the unsightly and annoying scars are an ever-present reminder of the unpleasant experience, especially objectionable to unmarried women.

If these objections can be avoided by a procedure which will accomplish as much and, indeed, more than the Alexander operation. every operator should welcome it as a step in the direction of progress.

The Wylie-Mann is as successful as the Alexander in accomplishing its object, but it surpasses the Alexander operation in the one objectionable feature, that it necessitates a laparotomy. The method

which obviates these objections of the Alexander and the Wylie-Mann operations is that which approaches the round ligaments through the vaginal incision, and by the vaginal incision I mean anterior colpotomy.

The incision in the vagina is free from all the objections above enumerated. No case has yet been reported in which any tendency to a hernia or lack of support in the anterior vaginal wall has been observed. The ligaments can always be found and at a point in their course at which they are well developed and capable of resisting whatever force may be necessitated to antevert the uterus. Moreover, the operation avoids any apparent scar and leaves the woman free from any reminder of an operative procedure. It simply remains, therefore, for sufficient experience with this vaginal method to demonstrate the fact that it accomplishes results equally as good as those obtained by the Alexander and establish it as the operation *par excellence* for the condition under discussion.

Whether the round ligaments shall be lapped upon themselves and stitched together in that position or whether they shall be drawn down and attached to each other in front of the uterus or to the uterine wall itself, or whether they shall be drawn down and attached to the vaginal wall, are points of individual preference which experience shall justify with each operator.

The technique of this procedure has been described by me in a paper read before the American Gynæcological Society at its meeting in Washington in 1897, published in the Transactions of that Society and also in *The Medical News* of October, 1897.

If, then, the fact can be established that the results are as good by this method as by the Alexander, there would seem to be no reason why it should not meet with general acceptance. Certainly, the statistics of Dr. Vineberg are strongly commendatory of his method of attaching the ligaments to the vaginal wall. My success in shortening the round ligament by the method which I have described certainly encourages me to continue its use, and I hope may induce others to try it.

Over and above the success obtained in simple cases, however, is the wide application which this method has in all cases no matter how complicated. It is surprising to one who has not attempted or witnessed this operation to discover how much more accessible either for removal or for conservative treatment the ovaries and tubes are through the vaginal incision than through an opening into Douglas' pouch. After delivering the fundus into the vagina the appendages,

first of one side and then of the other, can be separated from their adhesions and brought down into the vagina where, within easy reach and in plain view, they can be removed or treated in accordance with the most approved ideas of conservative work as may be indicated. In this way I have removed pus-tubes and ovaries and set the appendages free, determined the patency of tubes, exsected ovaries, etc., etc., finishing the operation in all cases by shortening the round ligaments. It is now nearly two years since I began doing this operation, and it has steadily grown in favor with me until at the present time I am using it to the exclusion of all other operations for the condition of retroversion with or without adhesions.

The contention which the advocates of the Alexander operation make that its field of application can be extended to all cases by doing a preliminary colpotomy and breaking up adhesions so that the uterus and appendages are set free, is perfectly legitimate; but when once an incision has been made through the vagina, all necessity for further incisions over the inguinal rings is obviated especially when that incision is made anterior to the uterus. It has been said, and said truly, that it requires more manipulative skill to perform the operation through the vagina than to do an Alexander's operation, but the requirements in this particular are not so great as to deter any man who has had an ordinary experience in gynæcological work from undertaking it.

Dr. CHARLES JEWETT: All the surgical methods of treating retrodisplacements of the uterus are more or less unsatisfactory because not anatomical. Perhaps the nearest approach to an ideal operation is one which takes up the slack in the utero-sacral ligaments or one which does the same for the round ligaments. Yet I have had little experience with any operations for retrodisplacements except ventrofixation. That I have done frequently. I do not, however, fix the posterior, but the anterior face of the fundus to the abdominal wall, and I attach it only to the peritonæum. The uterus then hangs in the pelvis by a peritonæal pedicle.

It is more than doubtful whether a man who lacks the skill to operate can use the pessary to much advantage. In the hands of the general practitioner the pessary often does harm; in the hands of the skilled gynæcologist it is frequently of great service, at least temporarily.

In regard to the after-effects of these operations in pregnancy and labor, especially ventrofixation, I have never seen any serious complication arise. Nor do I see any theoretical reason why pregnancy

or labor should be at all abnormal after suspension of the uterus, if properly done.

Dr. TULL: This is a pretty broad subject. I may say, however, that I agree with what Dr. Goffe has said in regard to the normal position of the uterus; but I do think that it is quite possible for a uterus to be retroverted and no symptoms result, although these women are more susceptible than others to disease, such as pyosalpinx after gonorrhœal infection or abortion and to hæmorrhoids. I do not think it would be good treatment to recommend operation in women who have no symptoms. I am thoroughly in accord with Dr. Nilsen in believing that many of these cases may be treated in other than surgical ways with good results. My experience with hysterorrhaphy has been very unsatisfactory. When I was at the Woman's Hospital I saw a good many of these cases and followed up a dozen or more which were considered surgical successes. It was the custom then to fasten the uterus to the abdominal wall with several stitches, and many of the patients complained bitterly of the pain caused by this position. One who had been suffering for months wrote me that the pain had suddenly disappeared and that she felt much better. When I saw her I found that the uterus had escaped from the attachment to the abdominal wall and this accounted for the cessation of the pain. This has led me to follow a different course in treating these cases. I have had good results follow the use of the pessary. One patient in whom I completely relieved the symptoms by this treatment in some way heard of the operation of hysterorrhaphy and insisted that I perform it in her case. I was finally persuaded to do it, and she was made much worse by the procedure. Her symptoms returned and she was not relieved until she wore the pessary again, although the uterus was against the abdominal wall. I have also had good results follow massage, especially in cases where there were adhesions. I have come to the conclusion that the mobility of the uterus is more important than its position and believe that this function should be sought rather than position.

Dr. MALCOLM MCLEAN: The subject is such a wide one and of so much importance that I have a great deal of hesitancy in expressing my views off-hand. I fully agree, however, with the views expressed by Dr. Nilsen and I appreciate the justice of his position, for I have traveled the road which he evidently has traveled, and I have seen results following conservative treatment which were perfectly satisfactory to the patients. I have also seen good results follow operative treatment in patients which could not be cured by other means. The

question covers two classes of cases, viz., those which are and those which are not amenable to treatment without operation. This necessarily drives us back to determining to which class each individual case belongs, and this is where the wisdom comes in. It is a question of whether a man is a good diagnostician or merely a good surgeon. A good surgeon, I take it, should be not a man at the end of a knife but a man *who can use his hand*, and that hand can be used with or without an instrument. I believe that one of the dangers of gynæcology to-day is that men are anxious to become surgeons in a very few weeks instead of becoming good diagnosticians in a good many years. I know there are many here to-night who will bear me out in the statement that they need every week of their lives to become good diagnosticians.

To-day I operated upon a woman with a retroversion in whom the pessary treatment had been faithfully tried without benefit. An operation was therefore indicated and I opened the abdomen because I wanted to see what was the condition which prevented that uterus from being held up by a pessary. I found beside the retroversion a dermoid cyst situated in the hollow of the sacrum. In this case Alexander's operation, which had been suggested by two gynæcologists of this city, would have failed to cure the patient, for no operation other than opening the abdomen would have revealed the true state of affairs.

I believe then that a man should first become a good diagnostician before he attempts to become a good surgeon—one who knows how to leave the knife alone as well as to use it. I would prefer to put myself in the hands of a surgeon who has wisdom enough and broad-mindedness enough to know when *not to operate*. This is what a distinguished member of this Society meant when he said that a good gynæcologist ought to be a good surgeon. I believe that if more men were well trained in general surgery there would be fewer unskillful gynæcologists ripping open women and pulling up ligaments.

One word in regard to the effect of these operations upon women who may become pregnant. I have not seen the bad results spoken of follow ventral fixation if it is properly done and extreme anteflexion of the uterus is avoided. If an artificial ligament is produced on the upper anterior surface of the uterus in order that the latter may be kept forward so that the intra-abdominal pressure rests behind the organ, I believe that good results will follow. If the attachment be made too close it probably might make traction upon the utero-sacral folds and give rise to symptoms such as have been described.

I do not know enough personally about Alexander's operation to warrant my discussing it; the reports are enough for me. I never employ this operation, and will leave its discussion to those who do.

Dr. CRAGIN: As the last speaker has said, there are two classes of cases which are quite distinct. The first class is that to which Dr. Nilsen has chiefly alluded. The cases which belong to it are amenable to palliative treatment and I heartily agree with his views on the subject. Moreover, I believe it is the duty of all gynæcologists who conscientiously consider what is best for the patient to see if she cannot be cured by these palliative measures in order that operative measures may be avoided if possible. The careful and persistent use of the pessary will often symptomatically cure these patients; where there is inflammation this should first be subdued by the use of the tampon and other local treatment. In those cases in which the uterus cannot be replaced and the displacement causes symptoms operation is indicated but, in my practice, operative measures are the exception and not the rule in posterior displacements of the uterus. Where the uterus is movable, I use the pessary and this usually makes the patient so comfortable that she asks for nothing more. If for any reason the use of the pessary causes discomfort, I advise Alexander's operation. In cases of fixed uteri which cannot be replaced and give symptoms, operation is certainly indicated and the simplest operation which will accomplish the result desired is the one to be employed. Where the uterus and appendages are firmly fixed I prefer to see them and, for this reason, although I have opened the posterior fornix and then done Alexander's operation, I do not feel satisfied with these procedures. I prefer abdominal section and inspection of the organs. Ventral fixation has given me good results. In the first place it must be remembered that in the class of cases indicating ventral fixation pregnancy is rare, only about six per cent. becoming pregnant. I have performed ventral fixation in a little over fifty cases, and although there may have been more, I know of only three who have become pregnant; these have been delivered without complications.

Experience seems to show that complications, when pregnancy does occur, are based upon two conditions, viz.: (1) The degree of fixity of the uterus, and (2) the location of the fixation. If the uterus is not too firmly fixed to the abdominal wall, and the posterior wall of the uterus is not involved in the fixation, complications during parturition are not likely to occur.

To sum up the matter, in my own practice, if the posterior-displaced uterus is movable, I employ the pessary and palliative measures. If

for any reason the use of the pessary causes discomfort (a small percentage of cases) I employ Alexander's operation.

If the posterior-displayed uterus is fixed, I perform ventral fixation, avoiding the two objections to the operation mentioned above.

Dr. VINEBERG: I have seen no bad results follow pregnancy after vaginal fixation of the uterus, according to the old method, though they have occurred in the experiences of other operators. Six or seven of my cases have become pregnant. One of two aborted, but I do not think this could be attributed to the operation. I have performed fixation of the round ligaments to the vaginal wall twenty-nine times. Four of the patients have since become pregnant, the two reported to-night, a third, who is out of the city; but whose mother informs me that she is far advanced in pregnancy and is entirely free from any disturbances. The fourth has become pregnant twice, and aborted each time. In each instance the miscarriage was no doubt brought on by herself, as she is determined not to have any more children. Dr. Rau tells me a case operated on by him is in her ninth month of pregnancy, and that everything is normal.

I agree with Dr. Nilsen in a number of points which he has made, especially in regard to the impossibility of always determining to what class a case belongs. So far as operation is concerned, I think that if the objection to the Alexander operation can be avoided by any other procedure, the latter should be employed. I always try to be conservative in my work and invariably employ palliative measures before operation. I have often found that even when patients say that they are no better after these measures have been employed, close questioning will elicit the fact that their symptoms have been relieved, and if treatment is continued a complete cure will result.

I have improved the technique of my operation of shortening the round ligaments and now invariably close the peritonæum after I have stitched the liganents to the vaginal wall. I have employed this method in three cases of complete prolapse of the uterus. In one of the cases there was a hernial condition of the entire pelvic contents so I performed anterior and posterior colporrhaphy in addition to shortening the round ligaments. When the patient left the hospital the uterus was in good condition, but three months later the vaginal walls began to roll out again, and in the course of another month the cervix had come down to the introitus.

Dr. PORTER: We are indebted to Dr. Nilsen for calling attention to the employment of palliative measures in these cases, for the tendency now is to operate at once. However, as Dr. Goffe has said, ad-

hesions exist in probably eighty per cent. of the cases of retropositions and, therefore, operative measures will sooner or later be necessary. It is sometimes difficult to determine whether or not there are adhesions present. Where there is any question upon this point, I open the abdomen and shorten the round ligaments by Wylie's method.

I believe that in future the operation of vaginal fixation (of the round ligaments) will be performed in some cases in which Alexander's procedure has heretofore been employed, as the former obviates any tendency to hernia. But where there are adhesions, I believe that it is better to make an abdominal section in order to inspect the parts and make a better suspension. The reports of Dr. Wylie and Dr. Mann show remarkably satisfactory results, *both immediate and ultimate.*

Dr. STILLMAN, of San Francisco (by invitation): I am from the wild and woolly west and you do not as a rule look to any one coming from that part of the country for anything new. However, I thank you for the opportunity of expressing our views on this subject. There seems to be here, as elsewhere, a lack of the gospel of common sense in dealing with these conditions. In California we have not by any means abandoned the use of the pessary. In the hands of the competent gynæcologist it is a valuable instrument, but there is no one form which will apply to all cases, nor can there be any one method of treatment which is applicable to every case. If a man says he has abandoned the pessary, he has never learned to use it. In cases where there are adhesions and the uterus cannot be readily restored we open the abdomen in preference to any vaginal operation. The surgeon is expected to use common sense as well as the knife. The treatment of these patients is a question of the exercise of common sense in the selection, from many methods, of the one best suited to the particular case, rather than attempting to make the case fit some "class of cases" for which some particular method is extolled. There are really about as many classes as there are cases.

Dr. A. PALMER DUDLEY: I will not attempt to discuss the paper, as the hour is late, but I would like to call attention to a statement made by Dr. Goffe to the effect that the vaginal operation is an easy one. It is most difficult of performance and I think Dr. Goffe is mistaken when he says that it can be done as easily as any other. I also think that in time he will abandon the operation because he will meet with complications which are best treated from above. I can cite many cases in which it would be a mistake to attempt to take out a pyosalpinx or break up adhesions through a vaginal incision. I am opposed to the operation on general principles as a method of treating

these cases. It is most difficult to attempt to antevert the uterus through an incision in the vagina. I know this from personal experience in doing vaginal hysterectomy. The best method of treating these patients is through a median abdominal incision. I abandoned Alexander's operation years ago. I never find it necessary to do any operation in cases of retroversion if the uterus and appendages are movable and free from disease.

Dr. VINEBERG: I have always said that the vaginal route is not suitable for all cases. I agree with Dr. Dudley that there are a number of these cases in which the abdominal incision is best.

Dr. LEROY BROUN: I have been surprised to hear some of the criticisms of Alexander's operation. It seems to me that the speakers who do not do the operation must have been misinformed. I do not know any one who employs this operation who does it when there are adhesions present, unless these adhesions are previously broken up. When the patient is under ether a thorough examination can be made and I believe the existence or absence of adhesions can be determined with absolute accuracy, except in very fat women. I certainly think that in cases of retroversion the uterus should be held up by some operation which shortens the round ligaments. To my mind this is the only physiological method of operating. This can be done in various ways. In regard to hernia following Alexander's operation I have only seen among our patients one single case, and have performed this operation some seventy-five times, and have taken care of as many if not more of Dr. Cleveland's cases. There may have been hernias. Somebody may have gotten them, but they have never come back to us, and it is reasonable to think they would have done so, since we have tried to keep track of the patients in every way. In this connection I would like to say that Dr. Cleveland and I have largely given up the custom of breaking up adhesions through the posterior vaginal incision. The results have not been thoroughly satisfactory. Where such exist, the only thing to do is to open the abdomen. Personally, I do not like ventral fixation. As to Dr. Goffe's statements regarding hernia after Alexander's operation, I have only to say that his cases must have been collected from all sources of attempts to do the operation without success. It does not seem likely that the best way to get a hernia is to cut through the inter-columnar tissue and fill up the ring with a ligament which is larger than that portion of the ligament occupying this place before; nor, as I have said before, have we had hernias.

Dr. Vineberg has made the statement that he has performed his

operation of vaginal fixation of the round ligaments in cases of procidentia uteri with only partial success. I do not know how he can expect the uterus to be held up in such cases by that method, for he simply fastens one movable portion to another equally movable.

Dr. VINEBERG: The sutures are passed not only through the vaginal tissue but through the fascia lining the pelvic cavity at the side of the pubic rami. The result was good in two of my three cases; there was a recurrence in the third case some months after the operation, as already stated, but this patient left the hospital much sooner than she should have done, owing to having contracted measles while in the hospital. Still I don't think the result would have been different even had she remained longer in the hospital, nor do I think that any method of operation would have been attended with any better success.

Dr. BOLDT: I do not know of any condition of the pelvic organs which has interested me more than this question of the treatment of retrodisplacements. Dr. Cragin has fully expressed the views which I hold upon this subject. I have been watching very carefully the various procédures which have been devised for the relief of this condition. Many of these cases can be cured without operation. There is, however, one class of cases which cannot be relieved by the pessary —those in which the uterus will tip over the upper bar of the instrument. Fortunately, these cases are rare. Then there are those patients who refuse to wear a pessary. These should be operated upon. The only operation for retrodisplacements of the uterus which has stood the test of time is that which shortens the round ligaments, and no other will give such good results. It has also stood the test of pregnancy. I have discarded vaginal fixation which, I think, has seen its day and is doomed, as it should be. In regard to the possibility of pregnancy, we must consider which part of the uterus expands most when this occurs. It is the upper part and the higher the fixation is made, the more trouble will result. If the fixation is low down, the danger is not so great. The danger of complications is obviated by vaginal fixation of the round ligaments. Dr. Vineberg has reported four cases in which pregnancy followed the operation with no bad results.

In cases in which the uterus is fixed, I believe the only thing to do is to open the abdomen, break up the adhesions and suspend the uterus. If the attachment is not made too high, but on the anterior wall near the fundus, no trouble will result. Only a small percentage of women with fixed uteri will become pregnant.

Dr. NILSEN (in closing): To my mind Alexander's operation

cannot claim a normal position of the uterus as its result, where the round ligaments are pulled out full length. Hence undoubtedly some of the new symptoms which at times succeed it. But then, since I operate only where I know there are internal complications I don't use it. Not that I have failed with it and discarded it but that, where treatment fails, I find the need of opening the abdomen to get at the cause and then always feel well-rewarded for so doing. Once the abdomen is open, the lesions found will guide one in the selection of method. I have been well pleased with results from ventrofixation, also from "reefing" the round ligaments in various ways. As for vaginal fixation, there is much in that operation that speaks against its use. I have seen one of its warmest advocates (having invited me to witness his demonstration) fail utterly. I have been told that it is astonishing how easily everything may be seen in this operation. That it may be very difficult has been clearly demonstrated to me.

In the great majority of the cases on whom I have operated I could not have discovered all I did nor finished to my satisfaction except through cœliotomy.

Official transactions.

LEROY BROUN, *Secretary.*

TRANSACTIONS OF THE WOMAN'S HOSPITAL SOCIETY.

Stated Meeting, December 21, 1897.

The *President,* PAUL F. MUNDÉ, M. D., in the Chair.

Large Submucous Fibroid: Supravaginal Hysterectomy; Recovery.

Dr. NATHAN G. BOZEMAN: Mrs. McH., aged 47, was admitted to St. Mary's Hospital, Hoboken, on Oct. 28, 1897. Her first menstruation appeared at 12, it continued to be regular, but was accompanied by pain in the lower part of the abdomen and vomiting up to the time of her first pregnancy at 20. After this the catamenia were normal in character until her last pregnancy seven years ago; during which interval she conceived nine times having one miscarriage and finally

twins. Since the birth of the twins she has not become pregnant. Three years ago her menstruation began to be profuse and several times she passed over two and three periods. One year ago the flow became still more profuse but it was regular. During the last ten months the interval between has been two weeks and the flow has been so great that she has been compelled to use sheets and even quilts to absorb the blood; as a result of which palpitation of the heart and lightness in the head have annoyed her. Just before entering the hospital she suffered from a very excessive hemorrhage and was still flowing when admitted.

Examination revealed a symmetrically enlarged uterus extending up to the umbilicus and on dilating the cervix, which was lacerated, the index finger palpated a fibroid bulging into the cavity and deflecting a sound to the left.

Under ether the endometrium was gently curetted, bringing away fungosities and a quantity of black fibrinous blood, then it was irrigated and the cavity which was very deep but comparatively narrow was packed with iodoform gauze. At the end of two weeks no further loss of blood having occurred and the patient's condition being improved I performed abdominal hysterectomy, dissecting away the cervix with the uterus. The patient made a good recovery the temperature not ranging above 100.5°.

The uterus which I removed and present illustrates well the submucous variety of uterine fibroids. The ovaries as may be seen have undergone cystic degeneration, one cyst about the size of my fist was ruptured during the operation; an incision through the hypertrophied anterior wall of the uterus exposes the growth inside which is everywhere intimately connected with it.

My reason for not trying to enucleate the fibroid and remove it through the cervix was the fear that I could not completely sever it on account of its inaccessibility, being entirely beyond the internal os, beside it was of large size and seemed soft and somewhat vascular and no doubt was undergoing degeneration on account of the pressure exerted upon it by uterine contractions.

The points of interest in the case are the remarkable fecundity of the woman during quite a long period, pregnancy occurring about every two years, the last one culminating in the twins, then the sterility for seven years, with a history of increasing profuse menstruation. Indicating that the nidus of fibrous tissue, which possibly was originally interstitial, gradually as it increased in size approached the endometrium, and the nearer it came to it the more excessive became the

loss of blood during the catamenia, which I believe is typical of submucous fibroids of the uterus.

DISCUSSION.

Dr. PAUL F. MUNDÉ: If you will open the tumor you will soon find out whether there is any fluid in it.

Dr. BOZEMAN: I imagine it is necrotic.

Dr. MUNDÉ: It is one of those soft myomas that deceive one very much. There is no fluid after all. You will note that the doctor calls attention to the fact that he performed suprapubic hysterectomy instead of enucleating it by the vagina, also that he left the cervix in the tumor instead of leaving it in the body. Are there any remarks?

Dr. J. N. WEST: Mr. President, I would like to say, the only unfortunate results that I have ever had doing hysterectomy for fibroid have been in those cases where I have left the cervix in, and that has led me to remove it, in order that I might get better drainage. It seemed that the cases I lost did not drain well. I believe it is a better plan to remove the cervix than to leave it in.

Dr. JAMES R. GOFFE: My early cases taught me and more extensive experience has confirmed me in the opinion that, as a rule, there is no necessity for drainage after operations for fibroid tumors of the uterus. In cases complicated by suppurative conditions of the ovaries and tubes, and an extensive raw surface is left in the pelvis from which the tumor has been torn away, it may be advisable to employ drainage, but ordinarily I find that in uncomplicated cases of fibroid tumor there is no necessity for any drainage whatever, and I believe it is a far better plan to leave the cervix and to cover not only the cervix but also the stumps of the broad ligament with peritonæal flaps, and leave no raw surface exposed in the peritonæum. The cases as a rule that I have operated upon in that way recover without any unpleasant symptom of any kind. Indeed, it has been my custom of late not to see my patient, that is locally, not to make any vaginal examination or interfere in any respect except to remove the abdominal stitches, from the time I do the operation until she is ready to leave for home, and the recovery is as simple after doing the operation as it is after long trachelorrhaphy with catgut ligature. Of course, the stitches that are put in the abdominal wall have to be removed, but, aside from that, there is ordinarily no after-treatment whatever. The advantages to be gained by leaving the cervix are these: all the supports in the pelvis are retained, the bladder is restored to its normal position, by drawing down the

ends of the broad ligaments and covering them with these flaps the vagina is retained in an extended condition. By the latter manœuvre atrophy occurs less rapidly, and, in married women, that is a consideration. Moreover, there is no danger of adhesion from any source, because there is no raw surface left in the pelvis.

I have noticed in a discussion before the Obstetrical Society of London recently on this same subject of technique in fibroid tumors, out of eleven men who participated, nine favored this operation of leaving the cervix and covering it with peritonæal flaps in accordance with the plan of my operation; and I believe it is an operation that is destined to steadily grow in favor.

Dr. MUNDÉ: Haywood Smith recently called it subperitonæal.

Dr. GOFFE: It is subperitonæal or retroperitonæal.

Dr. MUNDÉ: I think it is a subject that ought to be brought out a little more.

Dr. GOFFE: If you will excuse me from commenting upon this specimen, I think that if the doctor could have known as much about the tumor as he knows now, he would have classified it as a case in which no necessity existed for the removal of the uterus. It must be apparent to all that the tumor could have been removed *per vias naturales.*

Dr. J. D. BISSELL: It would have been almost necessary to have cut the cervix to have gotten at the tumor if he had known positively the nature of it.

Dr. GOFFE: The question is how much a man may be enabled to discover by dilating the cervix, and the point I wish to make is that it is a class of tumors in which it should be removed and the uterus left.

Dr. MUNDÉ: On looking at the specimen it seems to me that the tumor might have been enucleated and peeled loose. It would have been impossible to remove it through a cervix of that diameter; but it could have been removed through an elastic dilatable cervix.

Dr. BISSELL: I would like to ask if the symptoms pointed to pregnancy.

Dr. BOZEMAN: No. She gave a history of having had chills before coming to the hospital. I made a correct diagnosis as to the situation of the tumor. To remove the fibroid it would have been necessary to split up the cervix, but I was afraid that I might not remove the whole mass, and it appeared to be breaking down; that was the reason why I wanted to make a thorough operation.

Dr. MUNDE: The question of leaving in or removing the cervix is one that I think very important in a case of this kind. Has any one

anything to say on that subject? We all know Dr. Goffe's views. Dr. Goffe is one of the originators of this method. I confess I am one of his supporters.

Post-Mortem Specimen from Female Pelvis.

Dr. GEORGE C. FREEBORN: Mr. President, I have a specimen here that may throw a little light on this subject, which is the reason I interrupt you. Here is a specimen removed post-mortem five years after an abdominal hysterectomy. It consists of the bladder, rectum, all that remains of the broad ligament and the pelvic peritonæum. This woman had the uterus and ovaries removed five years ago, and two weeks ago she died of pneumonia. At post-mortem this condition of affairs was found, the uterus gone, the ovaries gone, and it shows very well what nature can do in the way of repair.

DISCUSSION.

Dr. P. F. CHAMBERS: Mr. President, I did not get in early enough to hear the case reported by Dr. Bozeman. I gather from what Dr. Freeborn says that you asked the question as to the propriety of leaving the cervix in abdominal hysterectomy.

Dr. MUNDÉ: I suggested that as a subject for discussion.

Dr. CHAMBERS: My habit formerly was to remove in all cases the cervix; but within the last year I have ceased doing so, and in all the operations I have performed within the last year or eighteen months, I have left the cervix in. I have done so because the operation is much more easily performed when the cervix is not removed, much more quickly performed, and my results have been invariably better; my patients have gotten up sooner. I think the floor of the pelvis has seemed to have more strength, and I have had no trouble at all after the operation in the form of drainage, having taken the precaution to first open thoroughly the cervical canal. Have had not the slightest sign of sepsis, and, my patients have invariably done better than they did when I removed the cervix.

Dr. GOFFE: Did you have any suppuration at all?

Dr. CHAMBERS: I have not, I have had no signs of sepsis, and the discharge has been very much less. They drain very freely for the first two or three days, and after that there is little or no discharge, and there has been less inflammation. I have always left a little piece of gauze through the cervix, which I removed after 48 hours.

Dr. MUNDÉ: Does the gauze pass into the peritonæal cavity?

Dr. CHAMBERS: No, it does not.

Dr. MUNDÉ: How does it help drainage?

Dr. CHAMBERS: It simply drains through the cervix. I leave the peritonæum free, having brought only the edges together, and leave the little piece of gauze in the cavity between the peritonæum and the cervix; I have no trouble with intestinal adhesions; there is nothing in the peritonæum to drain.

Dr. Y. WARDLOW: I am very glad that Dr. Freeborn has presented this interesting specimen, because it helps me to corroborate my own views on this subject, that a strong vaginal vault is formed by the cicatricial tissue. It has been my custom, when removing the uterus through the abdominal incision, especially for fibroids, to use the suprevaginal method, leaving the cervix in place. Where it has been practicable, I have transplanted the cut ends of the round ligaments into the stump of the cervix, then sewing the peritonæum over all so as to make a smooth pelvic floor. I do this with the idea of preventing unnecessary adhesions, however, rather than because I believe that it makes a stronger vaginal vault, since I do not believe that primary union between tendonous and muscular tissue is by any means as strong as that accomplished through the medium of cicatricial formation.

It has seemed to me better in a great many cases for the comfort of the patient, however, to avoid the abdominal incision, and I have been in the habit of removing tumors of such size, (indicating specimen) through the vagina. I have never seen, in my own experience, any case of prolapsed vagina following the operation, unless there was a tendency to prolapsus before. I have been in the habit of taking out the smaller tumors by vagina, and have tried to get a vaginal vault by cicatricial formation.

Dr. CHAMBERS: In regard to the abdominal operation, many cases that have been operated upon by the vagina, had it been performed in the abdominal manner, the uterus could have been saved. I had a case of that kind only two days ago, in which the question came up as to whether it was a case of fibroid, whether we should do the vaginal operation or abdominal. We decided to do it by the abdominal manner and when we did so we found the tumor was subperitonæal and it was easily enucleated. The uterus was left and the patient has made a perfect recovery with all her organs intact. If we had attempted to perform that operation by the vagina, it would have been necessary to remove the uterus, and for that reason while I do a great many of these operations by the vagina, still I think there are many cases where if performed by the abdominal manner, and

we had seen thoroughly what we were about, the uterus could have been saved. I believe the enucleation of the fibroid can often be done.

Dr. MUNDÉ: The question is not so much vaginal and abdominal hysterectomy as it is whether having done abdominal hysterectomy one could have left the cervix in, or could this tumor have been removed by the vagina without removing the uterus. These are the questions to be settled in this case. It seems to be very difficult for Dr. Bozeman to have decided that, because the tumor was of such a peculiar nature, so soft, that it is doubtful whether he could have got at it by the vagina, and I do not wonder that he took the abdominal route. I do not know why he did not leave the cervix in. I always leave it in except in cases of malignant disease, then I remove the cervix also, of course. In fibroid tumors I believe with Dr. Goffe, that the proper method is a subperitonæal operation, sewing the peritonæum together and covering the raw surfaces. I confess I have lost one case of this kind within a week. Dr. Goffe pointed out the possibility of a subperitonæal hæmatoma, and that is how I lost that case. Another case was where I performed hysterectomy for an intraligamentous ovarian cyst, and the attachments were such that I could not leave the uterus in, and the attachments of the bladder were such that I was obliged to make my stitches very superficially. The post-mortem showed that several of the stitches came very near touching the mucous membrane of the bladder. The first one lived four weeks and required a second abdominal section for intestinal obstruction which was produced by the large hæmatoma. I confess that is something of an objection to that method. Still, I shall do it again, because I have had many excellent results. It is an ideal method in my opinion.

Dr. C. CLEVELAND: I have always been opposed to leaving the cervix. I think I never have done a supravaginal operation; I never have believed in it. I think that the vaginal vault is always weaker by leaving the cervix. I think after removing the cervix that the cicatrix formed makes the pelvic floor a great deal stronger. I never yet have seen cases of prolapsus from complete extirpation. I have heard of such after leaving the cervix. Even Dr. Baer, who is an advocate of a particular method which he calls his own, suggests the attachment of the ovarian stumps to the uterine stumps, for the purpose of preventing prolapsus; for that reason, I suppose he must have met with cases of prolapsus of the vagina. I certainly advocate the entire extirpation; I always have performed it.

Dr. CHAMBERS: Dr. Cleveland spoke of joining the ovarian stumps. In my later operations I have tried to avoid a pedicle of any

kind, by the use of the clamps passed around the broad ligament, and well down to the cervix uteri, dividing between and removing the uterus. I have been able to see my blood vessels in between the jaws of the clamps and with a small forceps pick them out and ligate each one with small catgut, so when I finished my operation I had no stump.

Dr. BOZEMAN: In removing the cervix I did not cut away any of the vaginal portion. I simply dissected out the cervical tissue, making a wedge-shaped dissection almost to the external os. I do not think the vaginal vault is weakened in any way by dissecting out the cervix.

Calcified Fibroid, Carcinoma of Ovary and Tube, Chronic Pyosalpinx.

Dr. FREEBORN: This specimen is interesting from a pathological standpoint alone. In the first place, it is a calcified fibroid, removed by abdominal hysterectomy from a woman 51 years of age. It is completely calcified, just as hard as a rock.

The other specimens were removed post-mortem from the same case. One is a case of carcinoma of the tube which has broken through into a cyst of the ovary, with secondary deposits of carcinomatous growth in the liver and lung. Here is a part of the cyst wall showing a carcinoma, and here are slices of the liver and lung showing secondary deposits. The probabilities are that these deposits in the liver and lung got into circulation through the breaking down of this carcinomatous matter in the interior of the cyst wall. On the other side was an ovary and tube. The walls of the tube are thickened. It is a case of chronic pyosalpinx. The fluid elements of the pus have been absorbed and there is left behind cholesterin crystals, arranged in a laminated manner.

DISCUSSION.

Dr. MUNDÉ: These very interesting specimens of Dr. Freeborn are before the Society for discussion. The specimen of calcareous fibroid reminds me of a case I reported years ago, it was translated from the French. It appears to have been the same thing. I remember when I was a young man and assistant in the Maternity clinic at Würzburg, that an old woman came up for post-mortem. and she had a calcareous fibroid, like a billiard ball, attached by a long thin pedicle to the fundus uteri. She never knew she had it. Have any gentlemen anything to say about these specimens?

Dr. GOFFE: I would like to say in connection with the report of the calcified fibroid, that among my cases there was one in which a

multiple nodular fibroid was complicated by two small fibroids that had entirely broken loose from their attachments, and undergone complete calcification. They were entirely free in the abdominal cavity.

Dr. FREEBORN: The most unique one I ever saw was a calcified dermoid cyst that was found in the pelvic cavity of a colored woman down South. The calcified fibroid seems to me to be getting more and more common. During the last year I have seen quite a number.

Dr. GOFFE: Apropos of calcification I would like to recall a case I had some time ago of a large fibroid tumor accompanied by a most annoying symptom. This consisted of a discharge from the vagina of little concretions of lime. They were curled up like little pig tails, and there was a nasty muco-purulent discharge accompanying them. It was no unusual experience for a teaspoonful of these concretions to be discharged in twenty-four hours.

Dr. Freeborn pronounced these little calcareous formations as being calcified chorionic villi. In that case I removed the entire uterus, cervix as well as corpus, together with the tumor and appendages in one mass. The calcified formations came from a portion of the uterine cavity which was shut off by a membrane; through a hole in this the concretions made their escape. That specimen is now in the museum of the College of Physicians and Surgeons. It is probably the only specimen of its kind in the world. The description of it was copied in all the pathological journals of Europe and was spoken of as being a most unique case.

Dr. MUNDÉ: Was there any fœtus?

Dr. GOFFE: No, there was no fœtus.

Dr. FREEBORN: No fœtus, but the decalcification microscopic examination of these curlicues showed the exact structure of the chorionic villi.

Dr. H. T. HANKS: It reminds me of a case that came into the hospital about two years ago. The tumor lay in about the region of the appendix. It caused a marked swelling of the abdominal wall, and evidently fixed to it, so that I could not push it back or laterally; no fluctuation or pitting. There was considerable exudation in the region of the right ovary. Dr. Coe assisted me. I cut down, not in the median line, but directly over the tumor, exactly over the normal appendix. Before I got through into the abdominal cavity, my scalpel struck a calcareous mass. I worked my hand upwards, and finally got it in the abdominal cavity. I tried to separate the tumor from omentum and intestines, but it was so firmly adherent to all these organs it was impossible to remove this calcified tumor. Dr. Coe agreed with me that

it was very unwise to remove it. She was an Italian woman, had been confined three months before, and had been sick ever since. Dr. Mann of Buffalo said, "Go ahead," but the responsibility of the death rate was on my shoulders and not on his, and I gave her a chance to go home and die. She went home and fully recovered, and has been in my office and Dr. Coe's office several times since. She is now entirely well. It was a calcified tumor, directly over the appendix, and extending down to the right ovary. It was firmly adherent to the intestines and omentum and abdominal wall. The wound healed kindly, and she began to improve at once. She is a perfectly well woman to-day.

Dr. MUNDÉ: Nobody has paid any attention to Dr. Freeborn's second specimen. How does Dr. Freeborn know that the carcinoma did not begin in the liver?

Dr. FREEBORN: Primary carcinoma of the liver is rare. From the general appearance of the cyst, showing this ragged mass that afterwards proved to be a carcinoma, it is safe to say that it was secondary to the tube and cyst wall.

Dr. MUNDÉ: But is not it a fact that secondary carcinoma from the uterus and appendages in other parts of the body is exceedingly rare?

Dr. FREEBORN: Exceedingly rare, but here we have an exceptional case, here we have a necrotic case breaking down.

Dr. MUNDÉ: Is not it possible that there might have been a simultaneous carcinomatous disease of the appendages and the lung, too?

Dr. FREEBORN: I never knew of such a case, and in regard to such, primary carcinoma of the liver is exceedingly rare; with the lung it is more common, but we never think that carcinoma of the liver is primary until we have searched every other organ, because in the liver secondary deposits are very common. Carcinoma of the uterus is comparatively common, carcinoma of the ovaries and tubes rare.

Dr. MUNDÉ: The point I wanted to bring out was, Is not it exceedingly unusual to find a carcinomatous deposit in the liver from a carcinoma of the female genital organs?

Dr. FREEBORN: Not at all, from the ovaries and tubes; it is rare from the uterus.

Suppurating Conditions in the Female Pelvis.

By Yeatman Wardlow, M.D.

(See page 306.)

Discussion.

Dr. Mundé: Gentlemen, the paper is before you for discussion. I see before me Dr. Cleveland. I will ask him to open the discussion.

Dr. Cleveland: I was very much interested in listening to Dr. Wardlow's carefully written paper, and I certainly have not any criticism to make of the advocacy of the methods he defends. I think I can agree to everything that he advises; in fact, I cannot think of any one point where I have to criticise this paper. I operate in all these ways that he speaks of. Where there are pus tubes I am very careful not to open the abdomen. Nearly all my operations are done by the vagina, and since I have adopted that plan my statistics are vastly improved. I think oftentimes the operation is much harder for the operator, but it is unquestionably the operation for the patient. I have tried what is called conservative treatment in cases of infiltration in the pelvis, and I have perforated many cases where there had been no question that there was abundance of pus, cases of abscess of the ovaries and cases of abscess of large tubes; but where there is infiltration in the pelvis, where the lymphatics have evidently had part to do with the disease, I have never seen a beneficial result from partial treatment. I believe in such cases that the total extirpation of all the pelvic organs is absolutely required. I do not think I have anything further to say more than to commend this splendidly written paper. Am glad he has come here to give us the result of his experience, and I hope we shall see him often.

Dr. Hanks: I was very much interested in the paper, particularly in the statistics, because the statistics of fifteen years ago, or ten years ago, are very different from what they are to-day. Every one of us who operates to-day operates much better than he did five years ago; especially the younger men push forward and often surprise the old ones by doing the work in a scientific, clean, exact and successful manner. I look around constantly among my friends, and I am surprised at the wonderful advance that has been made in the technique of doing vaginal and suprapubic work here in New York.

Let me say that every one of us has done operations for ovariotomy where we did not cure our patients. This has been due to the fact

that it was a chronic case, and the circulation has been impaired for years, before operation, and the removal of a small portion only of the diseased condition is not going to cure the patient. We have all adopted a better method of tying our pedicle and sewing up the abdominal wound, than was produced formerly, and all of us are doing what Dr. Wardlow advocated, the vaginal method for suppurating disease which points towards the vagina. If the young operator does an ovariotomy through the vagina and without ever trying to select proper cases, he will often leave a decidedly diseased appendix. Select the cases for vaginal work carefully, and leave no diseased tube or ovary when hysterectomy is to be done. With reference to pus tubes, suppurating salpingitis and pus sacs, you want to differentiate between them. If you treat your patient even without the knife, but by curetting and packing after the acute stage is past, very often she will regain her health. They do not consult us if they have aches and pains, but very many of gonorrhœal cases where the endometrium is implicated get well, without removal of tubes and ovaries, by this palliative treatment. In these cases of specific endometritis I divulse, curette and irrigate the uterine cavity with sterilized water, then with peroxide of hydrogen, then pack with nosophen gauze and often cure bad caases. The great question for us to consider is this, How to treat each case on its own merits. I showed a specimen the other day at the Obstetrical Society where I operated above and below. I went in from above and found a large pus sac and thought I had an ovarian abscess; I went below again and, lo and behold! after making an incision, my fingers struck a fibroid, and I put her back in the Trendelenberg posture and enucleated a fibroid tumor, the upper lobe of which, from bad nutrition, had degenerated, and pus had formed. We cannot lay down a law which will fit every case.

Dr. CLEVELAND: You say that you believe a great many cases of gonorrhœal salpingitis get well without any treatment.

Dr. HANKS: I give them palliative treatment. I mean, I do not cut until I find there is necessity for it.

Dr. MUNDÉ: That is to say, there is a little pus coming down through the tube, discharging from the uterine cavity into the vagina.

Dr. HANKS: You may have little or much, and, if the proximal end is open, and we have often found it open, what is the use of cutting?

Dr. MUNDÉ: You admit the possibility of cutting.

Dr. HANKS: I may not have expressed myself clearly, but what I mean to say is this, that in purulent salpingitis, with the proximal end open, we can cure, and we have cured; and such cases have got

well so far as symptoms go. What happened forty years ago with all the women who had gonorrhœa? Did they all die of ruptured pus tubes? Select your cases before operating is my motto.

Dr. WEST: I should like to make a few remarks. It seems that the discussion is all on one side of the question to-night. I would like to say a few words on the other side. The attention of the profession was first generally called to the subject of treatment of pyosalpinx and pelvic abscesses by means of drainage, extensive vaginal incision and drainage, by Dr. Henrotin, of Chicago, and at the American Gynæcological Society two years ago he reported a considerable number of cases which showed remarkably good results; the mortality was almost nothing, and most of the cases were reported as cured. In my limited experience I have had opportunity to try that method myself and, in a case which I had last summer of an abscess of the right tube and ovary which developed a hydrosalpinx of the left side, I made a free incision and drainage, put in a self-retaining drainage tube and left it there three weeks, and my patient has entirely recovered. Dr. Hanks saw that case in consultation, and when I opened up the pyosalpinx I did not penetrate to the abscess of the ovary which I reached subsequently. Cases where the abscess is of recent formation and comparatively few adhesions, as I understood Dr. Wardlow, are most favorable for incision and drainage, but the great beauty of this method is that it is in the most hopeless cases, where the intestines are thoroughly adherent and there is no possibility of the suprapubic method without danger to the patient's life, that by free incision and drainage such patients can often be cured and retain the uterus. In other parts of the body, as in the leg, when there is a phlegmonous condition, we do not cut off that patient's leg because it is infiltrated with pus, but we drain it and every time a pus sac forms we drain that, and I think the same might apply to surgery of the pelvis. I believe thorough incision and drainage will cure most of these cases. Of course, there are cases where it may be necessary, in order to get perfect drainage, to remove the uterus.

The most important point is to make the drainage thorough, and to continue it for a sufficiently long time.

Dr. L. G. BALDWIN: I have in preparation a report of somewhat over 100 pus cases; those in which both sides were affected and both sides removed, the last case to be at least six months after operation. The uterus was left in any case. So far my replies have been very encouraging. I have heard from no one in which the relief has not been marked and perfect from a thorough removal of the suppurating

cavities, and I do not believe it is advisable to remove the uterus, especially in younger women. My method of removing the tube and ovary is that advised by Dr. Watson, of Chicago, by tying the ovarian artery and cutting the tube close or into the horn of the uterus, and closing the peritonæum over the cut end.

Dr. MUNDÉ: You are speaking entirely of the abdominal route.

Dr. BALDWIN: In relation to the point brought out by Dr. Hanks, in regard to pus draining through the tube, I do not believe that it does. The normal canal of the tube, as it enters the uterus, will nicely admit a bristle, perhaps the lead from a small lead pencil. If you get an inflammation sufficiently acute to cause the formation of pus, there will be swelling that will certainly occlude the canal. The comparison of an abscess in the calf of the leg to a pus tube, I think is hardly right. In a tube distended with pus the tube is directly diseased, there is nothing but the shell left. If the calf of the leg was as much involved, I think amputation would be the best treatment.

Dr. HANKS: I would like to inquire if Dr. Freeborn can enlighten us on one point, if the purulent discharge can come down through the uterus.

Dr. FREEBORN: That is an old question, and I have been asked to investigate it a number of times, and I did go into that subject very thoroughly in examining the uterine end of these pus tubes, and in every case I found that where the distal end of the tube was dilated, and there was pus in the lumen of the tube, the uterine end was either obliterated, or, from the swelling of the mucous membrane, it would be utterly impossible for the pus to get through. This question came up when I first joined the New York Obstetrical Society, and I then took a great deal of pains for over a year to make sections, both longitudinally and vertically; the per centage of complete obliteration was quite large, and where there was not complete obliteration, the lumen was so swollen that it would prevent its going into the uterus. If you examine the cornu of the uterus, there is quite a constricting muscle, and I should think, with a diseased tube producing irritation there, the chances are that this so-called constrictor muscle would close down anyway, and almost completely obliterate the lumen of the tube, even if it was not obliterated by inflammatory action.

I would like to say one word in regard to the point brought out by Dr. Wardlow in regard to the formation of adhesions. Any one who has studied these pus tubes, especially the ones in my autopsies, can see how nature has come in and tried to shut off the spread of this inflammatory or septic material from the peritonæal cavity, and in all

these cases where the pus tube is of any age you generally find a pretty thick layer of firm fibrous tissue, rather free from blood vessels, and I have never been able, in the examination of this tissue, to find anything in the way of a lymphatic. Now these adhesions generally spread across the pelvic cavity above the tube. It seems to be a formation of nature to dam back the pus and keep it in. If you go in and break up all these adhesions, as a consequence, you break down nature's dam; but if you go in from below you can reach your tube or abscess cavity and you can evacuate it, and you have this protective covering to keep back the infection from the peritonæal cavity. By that time the lymphatics are pretty well destroyed, and if you get good drainage from below, you have a pretty good chance of saving your patient from septic inflammation.

Dr. GOFFE: A great many who advocate this conservative method of incising pus tubes for their cure favor the radical removal of the uterus instead of its conservative treatment. It seems to me there is a little inconsistency in that. If the pus tubes can be reached and made well, why cannot we cure the uterus? I am one of those who are opposed to the removal of the uterus unless there are indications for it, and it seems to me that there is a good deal of inconsistency very often in most operators who insist upon this method of treating pus tubes by drainage.

I had a very interesting case this last week, interesting to me, of an abscess of the ovary and tube combined. The woman was sent to my clinic by my assistant, and was put under an anæsthetic ready for operative procedure, with the understanding that she was to be curetted only. She had been having hæmorrhages for about three weeks. So I curetted her at that time, but, in examining her pelvis, I found that posterior to the uterus there was a large irregular mass that was suggestive of ectopic gestation or pus. I did not feel justified in doing anything but curette, but in curetting I removed quite a quantity of what seemed to me to be degenerate placental tissue, thus confirming my impression of an ectopic gestation. Five days after the curetting she was suddenly taken while lying in bed with quite a sharp collapse, her pulse went up to 132, very thready and uncertain, and her temperature went to 104. I saw her about four hours after the attack, and then her pulse had steadied down somewhat, and I made up my mind that if there had been a rupture and hæmorrhage it had stopped, and she was improving, and I would not interfere. I let her go till the next day, and then I operated through the anterior fornix of the vagina with the idea of attacking an ectopic gestation, but I found instead a pus tube

and ovary. I had no difficulty in separating the adhesions and getting them down to the vagina. The abscess cavity ruptured in the process, but it was so situated that most of its contents discharged into the vagina, although the posterior wall of the uterus was necessarily bathed with it. I had a sponge above the mass originally, and I immediately irrigated with a salt solution, ligated and removed the tube and ovary, and closed the wound without drainage. The woman made a perfect recovery, has not had an unpleasant symptom of any kind, which shows to my mind, that irrigation is a good thing. I do not mean in this case alone, but I use it constantly in operations through the vagina. The case is also suggestive of the fact that pus which has been retained for a long time in these cavities, loses its septic qualities.

Dr. MUNDÉ: I would merely like to say that I emphatically believe in freely opening all pelvic abscesses, whether they are intraperitonæal or extra peritonæal, through a free incision in the posterior vaginal wall, provided they can most easily be reached by that route. I am not in favor of removing the uterus in consequence of the appendages being in a suppurating condition, invariably or necessarily. Whenever I find a loose pelvic abscess, I mean an abscess which is not adherent, such as a pus-ovary or a pyosalpinx, I prefer the abdominal route. I am not in favor personally, from my standpoint, of removing any of the pelvic organs through the vagina except the uterus, when I wish to remove that organ for a cancer or a small fibrona. Otherwise, I prefer the abdominal route.

Dr. BROOKS H. WELLS (present by invitation): I am very decidedly in favor of leaving the uterus in place, unless there is a definite and fixed reason for removing it. As far as attacking these pus collections through the vagina or through the abdomen is concerned, certainly, if the disease is bilateral or if there are apparently very strong adhesions and large masses, I would attack through the vagina. If the adhesions are probably not very dense, or if the disease is presumably unilateral, I prefer to go in from above. I think the statistics where the tubes and ovaries are removed for suppurative conditions, certainly the more recent statistics, are much better than the ones Dr. Wardlow cited. I cannot give exact figures in regard to my own operations, but I know that out of a fairly large number that I have had, those that have proved most satisfactory were the ones that have been done through the abdomen where the tubes and ovaries have been cleanly removed, and the cases I have done within the last year or two that have not been satisfactory have been cases where the palliative operation has been tried, where the pus has been evacuated by slitting up the tube and

leaving the tube in situ. These cases are apparently cured at the time, you think they are well, but within six months or so they are very apt to come back again and complain. I remember one case that Dr. Goffe probably knows about, a young girl who came to the Polyclinic Hospital about a year ago, who had double gonorrhœal ovarian abscess and double pyosalpinx. The pus was evacuated through a vaginal incision, and both tubes and ovaries were thoroughly opened up and drained. The woman made a good convalescence, she went out apparently perfectly cured. She came back again about four weeks later with another large mass in the pelvis. That was opened by a second incision in the vaginal fornix, and was found to contain only clear fluid. She was drained and went out apparently well, and I heard nothing more about her until ten days ago, when I was asked to witness another operation. The old symptoms had returned, and this time the operator took out the uterus, tubes and ovaries. The tube on the right side was simply a hard, impervious, knotty cord, and the ovary a little bunch of connective tissue. The tube on the left side was partly pervious, but nearly all of it had contracted down to a cord-like mass. There was only a drop or two of purulent fluid in it, yet the woman complained of serious symptoms, probably from the dense adhesions present.

Dr. WARDLOW: I have nothing to say in closing the discussion, except my reference to the question of irrigation was simply to avoid washing pus into the peritonæal cavity. I always make it a point to swab out an abscess cavity with some kind of antiseptic, but I believe if the sepsis is washed up beyond, that fact in itself is liable to cause some adhesions and will defeat the conservative purposes for which the operation is done, preserving a useful organ. With reference to the question that Dr. West raised that these cases with many adhesions are the very ones that are amenable to this procedure, I think it is occasionally true that those cases largely involved by adhesions and those complicated conditions that I have given, can be satisfactorily treated in that way. As to comparing the lymphatics of the pelvis with those of any other part of the body, I do not think it is a fair comparison. I agree with those who state that they would not remove the uterus except for a special reason. My special reason is that it is infiltrated with these lymphatics.

Official Transactions.

J. N. WEST, *Secretary.*

ABSTRACTS.*

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SOCIETY PROCEEDINGS IN BRIEF.

TRANSACTIONS OF THE SURGICAL SOCIETY OF LYONS, NOV. 4, 1897.

M. CHANDELUX: *Torsion of the Pedicle of Ovarian Cysts.*

This torsion is not a rarity, and, according to Bovulanski, is met with in twelve per cent. of the cases. At the moment of its production it gives rise to painful and inflammatory phenomena, which may mask the real nature of the affection and lead to errors of diagnosis.

In one case observed, the patient, thirty-four years of age, who had for four months previously been subject to attacks of abdominal pain, became suddenly aware of a very violent pain in the left iliac region. A large-sized tumor occupied the left side of the abdomen, and it was at first thought that one had to deal with an intermittent hydronephrosis. But the considerable volume of the tumor, the absence of dysuria, the absence of displacement of the right kidney, and, finally, the elevation of the temperature to 38.5° and 39° led to the exclusion of that diagnosis, and the symptoms were ascribed to the torsion of the pedicle of an ovarian cyst. This opinion was confirmed by the operation, which was performed ten days after the onset of the acute symptoms, the pedicle presenting five twists. The cure was completed in a fortnight.

In a second case the patient, forty years of age, had had three painful abdominal crises, which were considered attacks of peritonitis, due to the presence of a hæmatocele. The operation revealed an ovarian cyst with two and a half turns in its pedicle.

The symptoms vary according to the degree of the torsion; if this is moderate, the arterial afflux is not affected, but the venous return is either greatly impeded or entirely shut off, thus causing a rapid augmentation of the volume of the tumor. The cyst may, moreover, become inflamed or it may rupture.

If the torsion is tighter, the pedicle may become thinned out, may rupture or ulcerate, and the cyst become free and floating or remain fixed by adhesions; it may become gangrenous and cause death by a subacute peritonitis or in favorable cases it may atrophy and gradually become absorbed.

As a general rule, torsion of the pedicle, with the inflammatory and painful phenomena which accompany it, demands immediate surgical intervention.

* All Abstracts are made *directly* from original articles in the language in which they were first published.—EDITOR.

Discussion: M. GANGOLPHE had observed, a short time ago, a case of torsion of the pedicle of an ovarian tumor in a woman fifty-one years of age, whom he had previously advised to submit to an operation. He was suddenly called to his patient, as she was dying from peritonitis, but with unimpaired intelligence. She related to him how, four days previously, after unusual exertion, she had, without warning, felt her abdomen descend, and shortly thereafter the symptoms of her present trouble had manifested themselves.

A neighbor of this woman, also suffering from an ovarian cyst and frightened by this death, lost no time in requesting an operation. She had had, about a year before, sudden pains and symptoms of peritonitis, from which she had recovered. A very slender pedicle was found about the size of a goose-quill; but the extensive adhesions which necessitated the ablation of a part of the abdominal wall had maintained the nutrition and the vitality of the cyst.

M. CONDAMIN pointed out the influence of pregnancy and parturition upon the torsion of the cyst. The evacuation of the uterine contents gives the cyst more freedom and favors the torsion of its pedicle during the puerperal stage.

M. FOCHIER: Had it not been for the adhesions which maintained the nutrition of the cyst, there would perhaps have been, in the second case of M. Gangolphe, a tendency to spontaneous cure.—[Abstracted from the *Lyon Medical*, November 28, 1897.]

TRANSACTIONS OF THE MEDICAL SOCIETY OF MAGDEBURG, NOV. 4, 1897.

SIEDENTOPF: *A Case of Cæsarean Section, According to Fritch, in a Septic Parturient Woman.*

Following the Cæsarean section total abdominal extirpation was performed on account of the inreased gravity of the woman's condition. Mother and child both survived.

Discussion: LANGE asked why the Cæsarean section was not resorted to promptly after the first examination instead of being delayed for several hours, as had been the case.

SIEDENTOPF answered that the first examination took place two and a half hours before the second, after which the operation was immediately resorted to. The first examination showed: Tetanic contraction of uterus, well-marked uterine souffle, temperature, 38.3° C.; pulse, 110. Conjugate vera, 6¼ cm. First vertex presentation. Fœtal heart sounds could not be heard anywhere. Under these circumstances the Cæsarean operation did not enter into consideration at all, especially as the increase of the pulse and temperature rate were naturally ascribed to the long duration of the labor (thirty-six hours) and the fatigue occasioned by the transportation to the hospital. The second examination, however, presented a more significant state of affairs. Tetanus uteri and souffle had diseappeared, fœtal heart sounds to the left and below, temperature 38.8° C., pulse 110, and—daylight had in the meantime appeared—well-marked icterus. Now it was possible to make the diagnosis of sepsis, with living fœtus, and thus establish an indication for the operation.

MOELLER: *On Vaginal Rectum-Operations.*

After a few preliminary remarks upon the symptoms and clinical course of high rectal carcinomata, Moeller dwelt more at length upon the operative treatment, especially upon Kraské's sacral method. He then reported three cases in which he had attempted extirpation of the disease per vaginam. Of these one died directly as a result of the operation; the second developed general metastasis and died ten weeks later, and the third was almost cured after a lapse of four and one-half weeks. Similar to Gersuny's method he divided the sphincter, but immediately upon the completion of the operation he sutured the same, as also the posterior rectal wall and the perinæum. He agreed with Gersuny and Rehn that the method affords a splendid view of the operative field.

Discussion: SENDLER said that with the very exact and advanced technique of the day, the question of surgical interference in cases of carcinoma recti was not governed by the construction of new operative procedures but by the consideration of the probability of recurrence. The immediate results of most operations now in vogue were eminently satisfactory, but the ultimate outcome, despite the most thorough and extensive extirpation, was certainly disappointing. The colloid cancer was more apt to recur than the harder forms, and the prognosis is particularly bad in cases originating in the anterior wall on account of the early invasion of the bladder, vagina, etc. Early diagnosis is important, and digital examination should be insisted upon in cases of doubt. If the case is not one suitable for total extirpation, inguinal colostomy will often prolong the life and increase the comfort of the patient.

MOELLER closed the discussion.—[Abstracted from the *Muncheuer Klin. Wochenschr.*, December 14, 1897.]

OBSTETRICS.

UNITED STATES.

Treatment of Puerperal Septicæmia.

A. F. A. KING (*Nat'l. Med. Review*, January, 1898) says that four-fifths of all cases of puerperal fever recover under modern antiseptic treatment, while the mortality before the advent of antisepsis was frightful. With "modern treatment" *prophylaxis* is of utmost importance; it consists simply in protecting the puerpera from infection by the same rigid antiseptic *technique* that is observed in surgical practice. In fact, every obstetrical case should be considered a surgical one. If there is any difference between the two, it is that the obstetrical case should require a more *rigid* antisepsis than the surgical case. Infection having occurred, whether sapræmia, septicæmia or pyæmia (one, more, or all), whatever be the kind of infecting microbe, in *all* cases, one element of treatment is invariable, viz.: *the strength of the patient must be supported by food and stimulants* to counteract the general depression inevitable in every case of septic infection. Of foods, milk, meat juices and extracts are the best. Of stimulants,

whisky, or other liquor, if of good quality, in milk or water, at short intervals and in quantities (one, two or more tablespoonsful), according to the *degree* of depression. In bad cases, one pint, or several pints, may be required in twenty-four hours; even then the enfeebled heart may require the aid of hypodermic injections of strychnine, strophanthus or nitro-glycerine.

In simple sapræmia ("putrid intoxication") the removal of decomposing matter from the uterus by the finger or curette and the irrigation of the tract with solutions of corrosive sublimate, carbolic acid, creolin, lysol, etc., may be followed by complete cessation of the symptoms and rapid convalescence, provided the disinfection be complete and the patient be not already overwhelmed by a fatal quantity of ptomaines (*"septicæmia acutissima"*) when, in spite of the measures, she will die as from any other malignant infection. In other cases, very common, the patient is poisoned, not so much by ptomaine products of decomposition as by infection with microbes (chiefly streptococci) that have passed from the genital tract into the lymph channels and blood vessels. Here also antiseptic irrigations will be *necessary* for a long time; the results will not be so obvious as in sapræmia. In case of uterine phlebitis, in which the veins of the placental site are plugged with infected clots, the use of the curette or finger may dislodge these infected thrombi and induce pyæmic infarctions elsewhere. Even irrigations in these cases require gentle manipulation. In all cases, the vulva and the vagina should be cleansed before the uterus is approached.

These two comparatively simple measures: (1) *local disinfection* and (2) *support of the patient by food and stimulants* have probably saved more cases of puerperal septicæmia than all other remedies combined.

It is too early to conclude definitely as to the benefits of *antistreptococcic serum;* its immediate effect is to reduce the temperature and alleviate bad symptoms in a marvelous way. It is only effective in streptococcic infection. In cases of mixed infection the results are less favorable. Hence the necessity of a bacteriological diagnosis which requires twenty-four hours' time and special skill and apparatus. The use of the serum does not dispense with the local antisepsis and supportive measures.

Treatment by *nuclein*, given to increase the number of the leucocytes and thus aid phagocytosis, while still *sub judice*, is much less promising. *Hypodermoclysis of normal salt solution*, to promote leucocytosis, is probably more effective by eliminating ptomaines by rapid secretion through the kidneys. One, two or three pints may be employed. In cases of abdominal peritonitis, with pus formation, early *cœliotomy* and flushing of the abdominal cavity may save the patient. In puerperal metritis with deep suppurating foci, sloughing, etc., an early resort to *hysterectomy* offers the only hope of saving life. These formidable operations are not often found to be necessary or consent obtained until too late to save the life of the patient. Where they have been resorted to *early* recovery has followed in a sufficient number of cases to demonstrate their utility in saving life; especially so in cases where all other measures would have been futile. The employment or the *enforcement* of surgical measures for the relief of the lesions of puerperal septicæmia is a difficult problem for the future, which bids fair to yield a brilliant result in cases otherwise hopeless.

Symphysiotomy in the Country.

F. C. ARMSTRONG (*Penn. Med. Jour.*, January, 1898) reports a case of a dwarf, who was brought to his office in El Dorado, Kan., for examination. She was found to be about five months pregnant, and the pelvic diameters were approximately: antero-posterior, one and one-half inches; transverse, two inches. The patient's mother was a midwife, and promised to notify the doctor at the first sign of labor. On the 8th of April he was summoned, and, taking with him two other doctors, drove fifteen miles into the country to the patient's home, a dirty hovel of two rooms. The mother had disobeyed orders and attempted to deliver the child, so that one leg was protruding, but further delivery was impossible. The patient and surroundings were filthy in the extreme. After cleansing the patient as well as possible, chloroform was administered, an incision was made sufficient to admit the finger beneath the pubic arch. After the separation of the symphysis pressure on the trochanters added three inches to the transverse diameter, and the child was readily delivered. In spite of the unsanitary surroundings the wound healed well and the patient made a good recovery. Two months after delivery the patient could walk with but little inconvenience, although her gait was waddling.

Puerperal Infection.

ST. JOSEPH B. GRAHAM (*Virginia Med. Semi-Monthly*, January 14, 1898) says that the causes of puerperal infection may be classified as follows: Streptococcus pyogenes (usual cause); staphylococcus pyogenes aureus and albus; Klebs-Löffler bacillus of diphtheria; bacillus coli communis; gonococcus of Niesser, and perhaps the bacillus of malignant œdema. These germs may be introduced, either from the patient or her dressings, or, what is more usual, from the hands, instruments or dressings of physician or nurse. Admission is gained either through a solution of continuity, or through the puerperal endometrium.

The pathological changes depend on the germ producing the infection. The most marked changes are in the blood, which becomes thick and dark, acid in reaction and decomposes quickly; leucocytes and red corpuscles are disintegrated. Hæmorrhagic foci are found in the internal organs. With mixed infection pyæmia will occur.

Preventive treatment must first be considered. Any abnormal secretion from the vagina must meet with appropriate treatment. In health the vaginal secretions are antiseptic, hence preliminary antiseptic douches are uncalled for.

As an antiseptic for the hands of the physician and nurse a two or three-per-cent. solution of formalin is recommended, to be used after a thorough scrubbing with nail brush and soap. The external genitals of the patient should be well scrubbed. As few vaginal examinations as possible should be made.

After infection has occurred a douche of formalin, one to four per cent., is preferred, as it is non-toxic, and only slightly irritating, yet ranks foremost as a germicide. The uterine cavity should be thoroughly cleansed by the finger or curette. A suggestion, which has not been tested by the writer, is the conveying of formaldehyde gas combined with vapor of alcohol into the uterine cavity. Theoretically, it should prove of value. The constitutional treatment must depend on the kind of infection present. The antistreptococcic serum or

the antidiphtheritic serum should be used as indicated. The patient's vitality should be sustained by proper remedial agents, and the writer believes in pushing alcoholic stimulants.

A Specific for Puerperal Eclampsia.

F. S. WRIGHT (*Cincinnati Lancet-Clinic*, January 15, 1898) reports three cases of puerperal eclampsia in which the application of an ice-bag to the head, and over the carotids seemed to control the convulsions. In the first case chloral and morphine had been used without avail, but after the application of the ice no more convulsions occurred. In the second case the ice was supplemented by a full dose of veratrum viride. In the third case there was apparently no other remedy than the ice used yet the convulsions ceased.

GREAT BRITAIN.

Tedious Labor Followed by Double Phlegmasia Alba Dolens and Gangrene.

FRANK M. WILLCOX (*Lancet*, November 6, 1897), cites the case of a primipara, aged thirty-four years, very anæmic, with feeble circulation, but no organic disease, who had suffered intensely with very cold extremities. Labor at term was tedious, lasting forty-eight hours, the presentation being occipito-posterior; delivery was completed instrumentally; the perinæum being lacerated, was promptly restored. The puerperium for two weeks was normal, the temperature not rising above 99.8 degrees F. The patient left her bed on the twelfth day. On the evening of the sixteenth day she was seized with severe pain in her left leg, which became swollen, tender, white and shining in appearance. The veins in Scarpa's triangle and the popliteal space were very tender. No rise in temperature or abdominal tenderness. On the twentieth day discoloration was observed over the region of the great and second toes, which extend up to the tarsal articulations. On the twenty-third day the temperature rose to 100.6 degrees F., and the toes and dorsum of the foot became benumbed. Gangrene supervened; on the twenty-seventh day the whole abdomen became distended and respirations were embarrassed. Under stimulation and cardiac tonics she improved in general conditions until the thirty-third day, when phlegmasia of the right foot and leg developed. The patient sank rapidly and died on the thirty-sixth day after delivery. As there was clearly no indication of sepsis of the pelvic organs, the phlegmasia and gangrene were due to enfeebled circulation only, and indicates the necessity of prolonged treatment of anæmic patients with weak circulation during pregnancy, especially during the latter months.

A Successful Case of Cæsarean Section.

THOMPSON CAMPBELL (*British Med. Jour.*, January 1, 1898) reports the case of a patient admitted to the Western Infirmary, Glasgow, in December, 1897, at the full term of pregnancy. She had had eight previous pregnancies, all terminated by craniotomy, at full term on the first six occasions, and at the seventh month on the last two. The patient was short and had double genus

valgum. The pelvis was of the winged character, and the promontory of the sacrum projected so that the diagonal conjugate was only two inches.

The day after her admission to the hospital slight labor pains began, with dilatation of the os uteri. Dr. Murdoch Cameron performed Cæsarean section at once, removing a well-developed female child. Dr. Kerr grasped the edges of the uterine wound with both hands, so that there was really less loss of blood than at a normal labor. The uterine incision was closed with twelve silk stitches, and the Fallopian tubes were tied in two places and cut. The abdominal wound was united with sutures of silkworm-gut. The patient made an uninterrupted recovery, and was able to nurse the child after the second day.

Prevention of Large Mammary Abscesses by Expression of the Milk.

WILFRED B. WARDE (*The Lancet*, January 8, 1898) has found that expression of milk from the circumference of the breast has produced excellent results, especially in cases of imperfectly-developed breasts or nipples. The induration in these cases is due largely to inflammatory thickening and only secondarily to the retention of milk. In these cases only a small quantity of milk will come away as the result of expression, but the hardness and induration will gradually subside, and no abscess form. A case in illustration is that of a primipara, who had weaned her child, and for a month had no trouble with her breasts. She attributed the subsequent trouble to sleeping in a very cold, damp room. When seen by the doctor she was sweating profusely, with a temperature of 101.8° and pulse of 120. The pain in the left breast was so severe that she dared not move. The breast was large, the skin over the outer half red and œdematous, covering a hard, tender lump. The axillary glands were swollen and tender. Free manipulation of the breast was at first extremely painful, but eventually gave some relief. A small plug of greenish-yellow mucus came from the nipple. The breast was bandaged, and a purge administered. The following day the temperature was 103°. The outer half of the breast was occupied by a doughy, painful mass. To the writer's surprise, manipulation of the breast was followed by the exudation of six large drops of pure pus from the nipple, to the great relief of the patient. Poultices were ordered, and the next day the temperature was only 99.2°. The swelling was less. A few more drops of pus followed the manipulation. From this time on the indurated mass gradually softened and disappeared. It would seem that there was really an abscess in this case, and that the pus was evacuated through the nipple. The course followed is commended by the writer as advisable in similar cases.

The Action of Veratrum Viride in a Case of Puerperal Eclampsia.

JOHN GORDON (*The Lancet*, January 15, 1898) reports a case of a multipara, whose previous confinements had been normal. On July last, in the ninth month of pregnancy, the patient was attacked with a severe headache, and with a "fit." The doctor found her about three hours later with a pulse of 120, the pupils contracted, and the legs and feet swollen. He remained some time, but there was no recurrence of the attack. The next morning he was summoned again, to learn that the patient had had three convulsions during the

night. Soon after his arrival another convulsion came on, lasting fully five minutes. There was complete unconsciousness, the corneal reflex being abolished. After four more convulsive seizures had occurred, with irregular uterine contractions between them, a five-minim hypodermic injection of the fluid extract of veratrum viride was given, and in thirty minutes the pulse had slowed to 54, and had lost its hard, bounding character. The cornea was now sensitive, and the patient moaned and vomited. The pains became more regular, the os dilated, and in an hour and a half the child was delivered. The pulse and general condition gradually improved and consciousness partly returned. The next day the patient complained of headache, and the eyes were strabismic, but on the following day this had disappeared, and there was steady progress toward recovery. There was and is still albumen in the urine.

Veratrum viride is prepared from an American plant of that name, and is but little known in Great Britain. It acts as a powerful spinal and arterial depressant. The case cited is one in which the improvement must be traced directly to the action of this drug, as no other treatment was employed. The cessation of convulsions, the slowing of the pulse-rate and the lowering of arterial tension, followed almost immediately upon the administration of the drug.

The ætiology of puerperal convulsions is obscure.

Dr. Macdonald, from post-mortem studies, attributes the convulsive attacks to irritation of the vaso-motor centres, from an anæmic condition of the blood produced by the retention in it of matter that should have been thrown out by the kidneys. Having in veratrum viride a drug capable of producing a general vaso-motor paralysis, and of reducing the pulse-rate by stimulating the inhibitory nerves, it would seem to be fitted to meet the conditions in puerperal eclampsia, viz.: increased arterial tension and cerebro-spinal excitement.

GERMANY.

A Case of Splenic Anæmia Complicating Pregnancy.

ALFRED STIEDA (*Centralbl. f. Gyn.*, November 6, 1897) reports the case of a woman thirty-four years of age, who came under observation in January, 1896, in the eighth month of her sixth pregnancy, with all the symptoms of an advanced and rapidly progressing anæmia. She had always been in good health; but three weeks before applying for treatment her illness had commenced, with pain in the right side, a feeling of weakness, vertigo and buzzing in the head. Shortly thereafter her legs began to swell and the œdema soon extended over the entire body. Appetite and bowels were normal.

Upon physical examination the heart was found to be slightly enlarged and a hæmic murmur was heard over the pulmonary orifice; pulse small and frequent; lungs normal; uterus four fingers-breadths below the xiphoid cartilage and fœtus in the second vertex position; spleen very much enlarged and palpable, two fingers'-breadths below the free border of the ribs. The urine contained a slight amount of albumin, which disappeared after some days' rest in bed. Blood: hæmoglobin, 25 per cent.; red blood cells, 1,700,000; pronounced change in form and variation in size of the erythrocytes; ratio of red to white cells 1 to 200; few nucleated red cells. Fundus oculi normal. Treatment, liquor potassi arsenitis.

As an urgent dyspnœa began to develop premature labor was induced, through which ordeal the patient passed without any mishap, and the troublesome symptom immediately disappeared. Post partum the large size of the spleen became all the more appreciable, and it was found to extend forward as far as the median line. During the first few days of the puerperium the number of red blood cells decreased slightly,, but thereafter the condition of the blood began to improve rapidly. The therapy consisted of inhalations of oxygen and the administration of Fowler's Solution. In March she was discharged with spleen but little hypertrophied and blood status as follows: Red cells, 4,640,000; hæmoglobin, 45 per cent. In December she again came under observation with still greater improvement in her condition.

Stieda thinks that the pregnancy was not the cause of this pernicious anæmia, but that it had an unfavorable influence upon the course of the disease on account of the increased drain it entailed upon the resources of the economy. As soon as this burden was removed by the induction of the labor, her natural vitality began to assert itself, and, as the disease had not as yet wrought any irreparable damage to her organs, she soon regained her former good health.

Russia.

The Lithotomy Position during Parturition.

Oscar Schmidt (*Ibid*,November 27, 1897) speaks highly of the employment of the lithotomy position when the fœtal head lies in the pelvic canal or at the outlet. The patient lies upon her back lengthwise in a narrow bed. As soon as the pain begins, the physician and the nurse each grasp a leg, flex the knees strongly and press them as far as possible upon the abdomen, at the same time keeping the limbs strongly rotated outward and abducted. As soon as the pain ceases the feet are again allowed to rest upon the bed. The favorable effect of this manœuver is demonstrated by the fact that in this position a larger segment of the fœtal head becomes visible at the vulva, and that the labor is completed with the minimum exertion on the part of the patient.

Two explanations are given for the favorable effect. One is the increased abdominal pressure. The other and more important factor is the widening of the pelvic outlet. According to the researches of Walcher and Klein the articulations of the pelvis, especially the sacro-iliac synchrondroses, possess a certain mobility and more particularly so in the parturient woman. If the sacrum is fixed, the symphysis pubis is capable of a certain excursion up and down through an axis lying a little below and behind the promontory. In Welcher's position, that of slightly hyper-extended thighs with the legs hanging over the edge of the bed, there is an increase in the length of the conjugate diameter of the inlet; in the lithotomy position a decrease. It thus follows that in the latter position the conjugate of the outlet is increased. Aside from these observations the author shows that there is furthermore an increase in the distance between the ischial tuberosities in the position advocated by him, as is demonstrated by the fact that in the performance of symphysiotomy the maximum separation of the pelvic bones is obtained by putting the patient in the lithotomy position.

GYNÆCOLOGY.

UNITED STATES.

Effect of the Erect Position on Menstruation.

E. C. GEHRUNG (*Denver Medical Times*, January, 1898) considers that the immense number and variety of diseases to which the human female is subject, in comparison to the female of other mammalia, is influenced by the erect position.

The study of sanguineous menstruation which belongs almost exclusively to the human female, has been the subject of much labor and speculation. Some scientists contend that it is a secretion; others that it is a hæmorrhage. The author places himself unreservedly upon the latter side. If it is a hæmorrhage it is pathologic, and not physiologic. He considers this excessive sanguineous discharge an accidental hæmorrhage, subserving no useful purpose, and recognizes for its principal cause the *erect position.*

From his observations the author draws the following conclusions:

1. That the erect position of man is acquired or assumed and that the different organs have to depend for their support greatly on accident and the gradual adaptation through necessity of means to ends. A gradual transformation has occurred through numberless years, but the transformation is not yet complete.

2. That if the support of the pelvic organs is insufficient for all purposes that the production of artificial ligaments (Alexander's ventrofixation, etc.), or artificial mechanical supports, are the legitimate means to counteract the otherwise deficient conditions, and that a reliance on therapeutic agents is generally useless.

3. That menstruation is the equivalent of rut or estruation of the lower animals, and may or may not be accompanied by a greater or less sanguineous discharge.

4. That any excessive loss of blood or for too long a period is radically wrong; a pathological condition due principally to the erect position, and that it should, by all means at our disposal, be repressed (not suppressed), *i. e.*, diminished to a moderate quantity and duration, especially by mechanical means, as vaginal dry or wet tampons.

Pelvic Suppurations: Their Treatment by Vaginal Incision and Drainage.

DR. GROUND (*Northwestern Lancet*, January 1, 1898) gives to Landau, in Europe, and Henrotin, in this country, the credit of popularizing the treatment of extra-uterine pelvic suppuration by vaginal incision and drainage. Emmet, thirty years ago, made a practice of puncturing pelvic phlegmons, but the difference in effectiveness between the vaginal incision and vaginal puncture is great.

The indications for vaginal section and drainage in cases of suppurative disease of the pelvic viscera are the same that obtain in the principles of general surgery that have been sufficient and successful in other regions of the body.

Pus, when forming, travels in the direction of least resistance, and unless its progress is interfered with, that direction will be downward into the most dependent parts. Vaginal drainage would therefore appear to be the natural method.

Shock is much less after vaginal than after ventral cœliotomy. The operation by the vagina is generally accomplished extraperitonæally.

The method of operation should be determined by the physical conditions and location of the tumor. When this appears high in the pelvis and out of reach of the finger, and is freely movable, the abdominal route should be preferred. In some cases, after vaginal section, it may be necessary to open the abdomen, in order to more radically remove pathological conditions. In these cases the previous vaginal section does not complicate the case.

AUSTRALASIA.

A Case of Fæcal Vomiting for Two Days—Recovery.

DR. NEDWILL (*New Zealand Lancet*, December 4, 1897) reports a case of a woman from whom he removed the uterus for fibroids, and also removed an ovarian cyst which had undergone acute axial rotation. Everything went on well, with a normal temperature, until the fourth day, when she began to suffer from distension. Salines were freely given and repeated, and also large doses of calomel. Turpentine enemata were used and rectal tubes passed, but with no result. Neither flatus nor fæcal matter passed. On the sixth day she began to vomit, and continued on this and the following day to bring up large quantities of characteristic fæcal matter. Both the vomit and the breath were offensively fæcal to the smell. Her temperature was now slightly subnormal in the morning, with a rise in the evening of only 1° F. The patient refused another operation for relief. After vomiting set in nothing was given by mouth. On the eighth day, after washing out the rectum, preparatory to the administration of the enema, a large, loose movement occurred and rapid convalescence began.

GERMANY.

The Existence and Therapy of Chronic Gonorrhœal Vaginitis.

OSKAR BODENSTEIN (*Deutsche Med. Wochenschr.*, October 14, 1897) claims that the chief seat of chronic gonorrhœal colpitis is in the posterior vaginal fornix and adds furthermore that this and not the urethra is the primary seat of the infection. In view of the fact that the urethra is almost invariably involved, many authors have considered this to be the starting point of the process.

He quotes the following clinical criteria, as taught by Sänger, for the establishment of the diagnosis of chronic gonococcus infection:

1. The history may reveal: (a) ophthalmo-blenorrhœa of one or more children; (b) former ardor urinæ; (c) gonorrhœa in the husband.

2. Disease of Bartholini's glands. Characterized particularly by a petechial purplish-red area about the orifice of the ducts; especially suggestive is the discovery of the "maculæ gonorrhœicæ," on both sides, together with a reddening of the urethral orifice.

3. Fistulæ, abscesses and cysts of the Bartholinian glands are conclusive evidence of existing gonorrhœa.

4. Spitzcondylomata.

5. Dark red spots upon a yellowish-white streaked base upon the vulva.

6. Erosions of the external os of the cervix.

7. The local application of a 50-per-cent. solution of zinc chloride will cause the granulæ in the vaginal mucous membrane to spring into relief in chronic gonorrhœa.

8. Involvement of the urethra.

Irrigation practised by the patient should be of strong solutions of bichloride or carbolic acid, should be taken in the recumbent position and with an elevation of the bag to a height of one to one and a half meters. He calls particular attention to the advantage gained by making use of the air contained in the douche-nozzle and tube as a means of distending the vagina, thus creating an "ærocolpos." In this manner all the folds and irregularities of the organ are straightened out, and the entire surface becomes accessible to the irrigating fluid.

But it is chiefly to the treatment of these cases in which the irrigation treatment has been unsuccessful that his paper is directed. As is the case in the male urethra, chronic gonorrhœal vaginitis is a deep-seated process, the infectious agents being found chiefly in the submucosa, and thus but little affected by irrigations, especially as ordinarily practised. In the treatment of chronic urethritis in the male, large-sized sounds are used, which distend the affected areas, mechanically bringing the gonococci nearer to the surface, and thus excite increased secretion, which is controlled by local applications. Reasoning from analogy, a similar plan of treatment ought to be successful in chronic vaginitis. He employs, therefore, a firm tamponade of the upper half of the vagina, filling in all the fornices. To aid in the softening and desquamation of the abnormally thickened horny layer of the epithelium he adds glycerine to the cotton employed for this purpose. This agent, in virtue of its hygroscopic properties, also produces an exosmosis, which washes the gonococci to the surface. After twenty-four hours the tampons are removed, the secretion (which is increased in amount) mopped up and a topical application of nitrate of silver made in solutions varying in strength from 2 to 20 per cent. Then the tamponade is again practised. In this manner an early cure will be effected, provided, of course, that the annexa are not also the seat of infection.

France.

Treatment of Hæmorrhages due to Lacerations of the Cervix.

J. L. Audebert (*Journal de Med. de Bordeaux*, September 19, 1897) advocates primary suture of the cervix if the laceration is of any considerable extent and relates a case in which he applied this treatment.

The patient was a primipara, twenty-one years of age, who, after a normal labor, lasting about eight hours, was the subject of a profuse and prolonged hæmorrhage. It could not have originated from the uterine cavity, for that organ was well contracted and almost hidden beneath the symphysis. The examination of a slight perinæal laceration that was present showed that that also was not the cause. It was then found that a large laceration existed in the

posterior lip of the cervix, in the median line, and extended to the fornix.

After a prolonged hot vaginal irrigation, which did not affect the hæmorrhage, two Sims' specula were introduced, the cervix drawn down, and after thorough cleansing and the ligation of the bleeding points, the rent was repaired with three catgut sutures, which were passed through the entire thickness of the cervix. The hæmorrhage was thus controlled, and the patient left the hospital several weeks later with her cervix intact.

Other means at the command of the accoucheur for the arrest of hæmorrhage due to lacerations of the cervix are then discussed.

Hypodermatic injections of ergotine are of no use whatever if the laceration includes a blood vessel of any size.

Hot vaginal or intra-uterine injections will affect only those smaller vessels that will be occluded by uterine contractions, and hence are useless in cervical lacerations of any magnitude.

The application of long hæmostatic clamps or compression of the bleeding points with the fingers introduced into the vagina are considered uncertain and not devoid of danger.

Colpeurynters are not favorably considered. The method of Fritsch is mentioned. He approximates the thighs, elevates the buttocks and makes friction over the abdomen, and trusts that the formation of clots in the vagina will arrest the hæmorrhage. In the event of failure he injects perchloride of iron.

Breisky's procedure is well spoken of. It consists of the forcible pressure of the cervix against the symphysis pubis with two fingers introduced into the vagina, whilst the outer hand makes strong counter-pressure upon the fundus, thus producing a temporary anteflexion. After a compression of from five to ten minutes the hæmorrhage ought to be arrested.

Tamponing the vagina is probably the most frequently practised method, but is open to many objections. Dührssen employs utero-vaginal tamponade. But all these procedures do not remedy the tear, and the author agrees with Emmet, that cervical lacerations are prolific causes for future troubles as endocervicitis, endometritis with ectropion, parametritis, etc. He therefore again insists upon the advantage gained by immediate repair, and claims that it is no more difficult of accomplishment than a properly performed tamponade of the vagina.

PÆDIATRICS.

United States.

Some Practical Points about Worms in Children.

W. F. Cheney (*Pacific Rec. of Med. and Surg.*, December 15, 1897), warns against making a diagnosis of worms in a child unless they have been seen to pass from the child and inspected by the physician, bits of mucus being frequently mistaken by the mother for worms; when in doubt a cathartic should be given and the stools watched. Most of the symptoms attributed to worms are generally due to indigestion and disappear with regulation of the diet. Pin worms—the most common kind—when really found, are best treated by rectal

injections, given directly after the bowels have moved; salt and water or an infusion of quassia may be employed. When the worms have passed high into the colon, we must also give drugs by the mouth, J. Lewis Smith's mixture of santonin and the fluid extracts of spigelia and senna being the best.

A Case of Tetanus Neonatorum treated with Antitoxic Serum—Death.

C. V. BURKE (*Pediatrics*, December 15, 1897), reports the case of a child who began to have convulsions on the night of the seventh day. When seen the following day the slightest touch would throw it into a characteristic spasm, in which rigidity was absolute. The stump of the cord was covered with thin, sero-purulent matter; the temperature was 99 degrees. The usual measures were taken, besides which, at 2.30 P. M. 10 c.c. of Gibier's were injected. At 4 the temperature was 101 degrees and the dose was repeated. At 5 the temperature was 100.4 degrees, and 6 c.c. were administered. From this time on no more serum was given; the spasms became somewhat fewer but a touch was enough to induce them. The temperature rose rapidly to 104.2 at 4 o'clock the following morning, and at 8 o'clock the child died.

The Management of Hernia in Infancy and Childhood.

W. B. COOLEY (*Med. News*, December 18, 1897), believes that operation should not be advised in the herniæ of young subjects till a truss has been tried for one or two years without benefit; except in (1) femoral hernia, (2) irreducible or adherent omentum and reducible hydrocele, and (3) cases that lack proper home care. The truss, if properly constructed, has no objections, a light steel spring one being the best. Its use should be begun as early as possible. The author estimates, however, that about one-third of all cases of inguinal hernia in children are not cured by mechanical means. Umbilical hernia is best treated by the wooden button and rubber plaster; the latter should completely encircle the abdomen and should be changed about every ten days; nearly all these patients are thus cured. Epigastric herniæ must usually be treated by operation, as must also femoral herniæ. In the majority of cases of the latter the author has employed Bassini's method. Also in operations for inguinal hernia the author gives the preference to Bassini's method, including the transplantation of the cord; two points are emphasized, viz., to stop all bleeding at once, and never to cut any of the fibres of the external or internal oblique in opening the canal, gentle stretching being sufficient. The author uses kangaroo tendon for the buried sutures. The mortality of hernia operations in children has been about one-half of one per cent.

The author thus sums up the results of his own cases:

Bassini's method; 257 cases; 249 traced; 1 death (pneumonia); 2 relapses.

Cord not transplanted, 13 cases; 11 traced; 4 relapses.

Femoral, 15 cases; 14 traced; no relapses.

Umbilical and ventral, 5 cases; 3 traced; 2 relapses.

GREAT BRITAIN.

Aseptic Vaccination.

R. W. LEFTWICH (*Brit. Med. Jour.*, December 11, 1897), in view of the possibility of the inoculation of disease with vaccination, as well as of infec-

tion with the breaking of the vesicle, has adopted the following procedure: His armamentarium contains discs of oiled silk kept in absolute alcohol, salicylic wool, perchloride of mercury gauze, ½ inch strapping, 1½ inch crepinette bandage, and a germicide soap solution. The arm is washed and dried, then scarified with a lancet, which has been held in a spirit flame. The discs are taken from the spirit with aseptic forceps and dried upon the wool. The vaccinations are then covered each with a disc, wool is laid over these, then a piece of gauze, secured by strips of plaster, and the whole covered by two or three turns of bandage. The arm is examined at the end of a week, if necessary pricked, and the dressing renewed without the discs.

CANADA.

On the Duration of the Period of Infectiousness in Scarlet Fever.

J. T. NEECH (*Montreal Medical Journal*, November, 1897), questions the usual procedure of isolating uncomplicated scarlatina cases for only six weeks, providing at the end of that time desquamation is complete. While we isolate longer those cases that have a purulent discharge, actual infectiousness may cease either before or after such a discharge has stopped. As these discharges are infectious, it seems reasonable to suppose that the blood stream from which they are derived is itself laden with the poison, and that this infective material has been stored up somewhere in the body, perhaps in the condition of spores. From the enlargement of the lymphatic glands, it seems not unlikely that the poison is retained in them, thence to pass into the blood stream and finally be eliminated by the various emunctories, and it is likely that the desquamating cuticle owes its infectiousness to the secretion of the glands of the skin. Comparing reports from the English hospitals, it was found that when the period of isolation had been forty-nine days or under the number of return cases was 1.86 per cent.; and where the isolation was between fifty and fifty-six days, but 1 per cent. In the author's opinion, cases which show any enlargement of the lymphatic glands should be retained till such enlargement disappears; the nasal cavities should be disinfected before discharge; there should be two convalescent wards, to be used alternate weeks, in which the patients should be prepared for a week before dismissal; the minimum period of retention should be eight weeks, and where complications supervene thirteen weeks, irrespective of the healing of discharging surfaces, as such surfaces can hardly be infectious after that time. It is also wise that the patient after dismissal should not sleep with any other person for several nights.

Persistent Foramen Ovale.

R. D. RUDOLF (*Canad. Practitioner*, December, 1897), reports a case of persistent foramen ovale and ductus arteriosus in a boy born normally at term. At birth there were labored breathing and retraction of the lower costal zone, with great cyanosis; these symptoms disappeared, but the cyanosis recurred at intervals. The child died in eleven days of diarrhœa and asthenia. No bruits were heard on examination, but the rhythm was frequently irregular and the rate high. On post mortem the lungs were found normal; the right auricle of the heart was twice the size of the left and its walls rather thicker; in the

septum was a large foramen ovale, only half closed by its flap; the right ventricle was as large as the left and its walls as thick; the pulmonary artery and the ductus arteriosus, which persisted, were each much larger than the aorta. Normally after birth the pressure in the left auricle becomes greater than that in the right, thus closing the valve of the foramen ovale, which later becomes adherent; thus any regurgitation means lack of development or disease of this flap. The cyanosis is supposed to depend either on the intermixture of the blood or upon venous congestion; if the former, then the pressure would be greater in the right auricle to allow the blood to pass therefrom into the left auricle, and if this were true all infants would be cyanosed for a time; moreover, a very considerable mixture of venous with arterial blood will not cause cyanosis. On the other hand, blueness of the mucous membrane suggests insufficient action of the right heart; now the work of the right heart is increased by the patent ductus arteriosus, and its internal pressure increased by that transmitted from the left auricle through the foramen. As long as compensation for this extra work is maintained no cyanosis will occur; but the least strain upon the heart or failure of compensation will lead to venous congestion and cyanosis. The obstruction in the pulmonary circulation from the collapse of the lungs at birth and the patency of the ductus arteriosus would explain the compensatory hypertrophy of the right ventricle; the high pressure in the right auricle would probably cause some admixture of venous blood but not enough to explain the cyanosis.

AUSTRALASIA.

Deaf-Mutism and the Importance of the Recognition of Deafness in the very Young.

P. WEBSTER (*Intercol. Med. Jour. of Australasia*, October 20, 1897), remarks that the intimate dependence of the acquisition of speech upon the perfection of the hearing apparatus in early life is little recognized by the laity, and, indeed, not sufficiently by the profession. In too many cases children are allowed to reach the age of three or four years without talking, in the idea that they are stupid or backward, or "will grow out of it," an idea sometimes encouraged by the doctor. It is an established fact that in the great majority of cases the deafness that gives rise to mutism is acquired rather than a congenital defect. The practical application of this fact is that there is a percentage of these cases, small, perhaps, in which timely removal of post-nasal growths and attention to the ears, and care of the throat and ears during the exanthemata, may prevent mutism.

Notes on a Case of Cancrum Oris.

J. MAC MASTER (*Australas. Med. Gaz.*, November 20, 1897), describes a case of cancrum oris in a child five years old, following typhoid fever. Beginning as a dark slough on the internal aspect of the left cheek, the disease by the succeeding day had invaded the left angle of the mouth, the mucous membrane of the aveolus of the upper jaw and the hard palate. The gangreneous tissue was removed, and the affected surface swabbed with pure carbolic acid several times, but the process was arrested in the hard palate only. The disease spread along the upper lip, and four of the upper teeth loosened and were extracted, exposing the bare alveolus. Fuming nitric acid was now used, and four applications were sufficient to cause the cessation of the process. A few days later some facial

paralysis occurred, and still later an abscess formed at the angle of the left inferior maxilla, which was incised and healed. The child then rapidly improved. When seen a month later the paralysis had persisted, but the facial deformity was slight compared with the original disease.

Notes on two Cases of Intussusception, with Laparotomy.

S. C. GODFREY AND J. L. REED (*Ibid.*) report the case of a child, seven and a half months old, that was taken with pain, vomiting, tenesmus, and the passage of a small quantity of blood from the bowel; no tumor could be felt. The next day two enemata were given, one bringing away some blood. The child's condition improved somewhat, but no real relief was obtained and operation was advised. This measure had to be postponed for two days, when a small tumor could be felt in the region of the umbilicus. On opening the abdomen an enteric intussusception was found, four and a half inches in length. It was reduced, but the last two inches were gangrenous and gave way. This portion was removed, and, haste being necessary,, the cut ends were stitched to the abdominal opening; the child died two hours later. A second case, five months old, was taken with abdominal pain, bile-stained vomit, and at first constipation, with bloody movements after an enema. No tumor could be felt. An operation was done on the second day, and an ileo-cæcal intussusception found and reduced; the invaginated gut was congested and had lost its gloss. An incision was made in the small intestine to permit the escape of a large amount of gas and fluid fæces, and closed with Lembert sutures. The child died nine hours later. Holme Wiggin thinks that laparotomy will be the future treatment for intussusception; and no doubt in many of the cases so treated unsuccessfully, as in the writer's own, operation was too long delayed. It should be done within the first forty-eight hours, when reduction is easy and without tedious manipulation and exposure of the bowels.

GERMANY.

Operative Treatment of Spina Bifida Occulta.

H. MAASS (*Deutsche Med. Wochenschr.*, November 18, 1897), reports a case of spina bifida occulta operated upon by himself. The patient was a female child three years old, born of healthy parents, and in whom, after her third month of life, certain tropic and functional disturbances of the lower extremities were noticed. The legs were strongly abducted and rotated outward, and capable of but little active motion. The left foot was cold and bluish in color. Bladder disturbances were not present, but during defæcation prolapsus ani frequently occurred.

At about the end of the second year she made the first attempt to walk, but could not stand upright without being supported under the arms. Massage and electricity were applied upon medical advice, but were of no avail. Upon examination the above-described conditions were found, beside a moderate genu valgum on the left side and a marked pes valgus on both sides. The left leg was also about 1 cm. shorter than the right and somewhat defective in development. Sensation was retained in both limbs, and the electrical reactions were normal. Upon her back, over the lumbar vertebræ, was a flat tumor about 8

cm. in diameter, soft, but not fluctuating and not adherent to the skin. Palpating the spine, it was found that the posterior arch was incomplete at the twelfth dorsal vertebra; below that the palpation of the arch was impossible through the overlying tumor.

Now, Maass reasoned that the defective innervation of the lower extremities was due either to a concomitant arrest of development in the central nervous system or to a compressive myelitis at the site of the defect in the spinal arch, and leaned more to the latter theory.

In an operative attempt to release the cord of pressure, he made a longitudinal curved incision from the eleventh dorsal vertebra to the upper border of the sacrum. The tumor proved to be a lipoma, which was readily enucleated, and thus was laid bare a musculo-fibrous membrane covering in a defect in the posterior arch, which extended from the lower dorsal to the upper sacral vertebræ, and measured 3 cm. in its widest divergence. The membrane presented at the level of the body of each vertebra, a deep horizontal furrow, which in all probability caused the pressure upon the cord. By a number of longitudinal incisions along the left insertion of the membrane the furrows were smoothed out and the pressure was removed. The skin edges were then approximated and the wound healed without any complications. From the tenth day after the operation the functional power of the affected limbs began to improve and the child was soon able to walk unassisted. But the trophic disturbances of the left leg were not at all removed, which led to the conclusion that there was after all some concomitant lesion of the central organ.

Mexico.

The Treatment of Asphyxia of the New-Born.

L. T. Alcala (*Gac. Med. de Mexico*, September 15, 1897), in considering by what means we may know if an infant is still alive, says that of course any of the vital manifestations—muscular movement, respiration or cardiac impulse—would answer the question in the affirmative. When the first two are absent we may have to look very closely for the third, and even if this is appreciable to neither sight, touch nor hearing we should not necessarily give up hope. The case of Tardieu is quoted of a child that was buried alive at birth, but was resuscitated after three-quarters of an hour; and other cases have been reported of children abandoned or buried beneath ruins for considerable periods (in one case as long as fifteen hours) that were finally restored to life. Various classifications of asphyxia of the new-born have been given by different authors; as regards the cyanotic and white forms, Grenser does not think the distinction justified, believing that well-nourished children, the offspring of healthy mothers, present the livid form, while children less well nourished and born of anæmic mothers will, if asphyxiated, be pale and flaccid. The author follows Schultze in distinguishing two classes of asphyxia, with and without muscular tone. If blowing upon the child's face is not followed by contraction of the facial muscles or normally rapid cardiac pulsations, it is only necessary to touch the base of the tongue to decide whether the asphyxia is serious or not; if there is reaction of the palatal muscles the condition is not dangerous. In either case the finger will assist the introduction of a tube by which the mucus obstructing the pharynx may be aspirated. If the asphyxia be not serious, cleansing the

air passage will, with the help of baths, cutaneous irritation, etc., be sufficient to restore breathing; while the measure is equally necessary as a preliminary in the management of the severe cases. In the latter the author gives the preference to Schultze's method, which he describes at some length. French obstetricians have been slow to adopt this, and many follow the procedure of Rivière, which in brief consists in grasping the child by the legs, and causing it to describe the arc of a circle with the head downward and face always forward; this position favors the expulsion of mucus, and by the weight of the body and pressure of the abdominal viscera upon the diaphragm causes expiration, inspiration following the reverse movement; the cycle is repeated ten or twelve times a minute. A method credited to Dr. Carlos Patiño is also described in which the operator holding the child by its extremities with both hands in a horizontal position, face upward, doubles and undoubles its body repeatedly. In conclusion, the writer condemns the practice of mouth-to-mouth insufflation, especially as done by careless midwives that may be the subjects of tubercular or other disease.

Austro-Hungary.

The Capacity of the Stomach in Childhood.

Pfaundler (*Wiener. Klin. Wochenschr.*, November 4, 1847), considers the study of the capacity and elasticity of the stomach in the various stages of infancy and childhood, as one of the greatest importance, and says that the results obtained should be the basis upon which the quantity of each individual feeding should be determined. He claims that the principles and technique of previous researches in this field were in the main faulty, because: (1) Due consideration was not given to the intragastric pressure, under which the measurements were taken; (2) it was not taken into account that the degree of contraction of the stomach, as found post-mortem, varied considerably; (3) the stomach capacity was reckoned according to the age or weight of the subject and not according to the length of the trunk, as it should have been. For children of like age are not always developed to a corresponding degree, and it is evident that the same child may undergo great variations in weight, irrespective of the capacity of its stomach.

He also studied the dilatability and elasticity of the stomach walls, and made measurements of the pylorus. As a result of researches made in seventy post-mortem examinations, he draws the following conclusions:

1. The capacity of the stomach in a nursing infant is, as a rule, considerably less than that of an artificially-fed child.

2. The capacity of a healthy stomach is, as a rule, considerably less than that of a stomach subject to functional or organic disease.

3. The true capacity is in inverse ratio to the degree of expansibility and elasticity. Large stomachs possess but little expansibility and elasticity; small stomachs possess these qualities to much greater degree.

4. The true capacity, is to a large extent, governed by the size of the pyloric orifice. With a narrow pyloris the capacity is high; with a wide one the capacity is low.

In several cases he was enabled to make an interesting series of experiments with the same stomach, first in the living subject, then in situ in the cadaver, and

finally with the excised organ, and found that under the same hydrostatic pressure (20 c.c.), the capacity increased under those circumstances in the order mentioned. He was thus in position to determine the degree of abdominal pressure and what was more important, the influence of the muscular tone during life.

He distinguishes two kinds of dilatation. That due to "gastroparesis" and that due to hypertrophy, hyperplasia and cirrhosis following stenosis of the pylorus. Under gastroparesis he includes the combined influence of "hypotonie," the decreased muscular tone of the stomach wall during the resting period of the organ, and "hypokinesis," the decreased muscular power during active digestion.

In nursing infants he found not a single case of dilated stomach during the first year of life, while twenty per cent. of artificially-fed children presented this abnormality. Thus is deduced an important guide for prophylaxis and therapy in these pathological conditions. An habitual over-distension may be avoided by the proper determination of the size of the individual meals, as per the following table.

Age in months.....	1	2	3	4	5	6	7	8	9	10	11	12
C.C 90	100	110	125	140	160	180	200	225	250	275	290	

From a therapeutic point of view, in cases of dilatation of the stomach, that organ ought to be relieved of its residual contents two to two and a half hours after each meal, but a caution is added not to irrigate the stomach for this purpose, for under the high pressure that is, as a rule, employed in this procedure, the weak stomach wall is only too apt to suffer increased damage.

France.

Pneumonia in Childhood.

Chambard-Henon (*Lyon Medical*, November 21, 1897), strongly advocates the employment of hydrotherapy in the treatment of the pneumonia of childhood. He gives an account of a case in which he claims to have aborted the attack by the use of baths according to the method of Brand. The patient, a child of three and a half years, became suddenly ill with general malaise, insomnia and vomiting. Upon being examined the next day the temperature was 39.8° R., pulse 128. The respiration was a little harsh, over a circumscribed area, beneath the angle of the scapula; there was no change in the percussion sound. A pneumonia was diagnosed, and wet compresses applied to the chest. On the following day the temperature varied from 39.9° to 40.4° R., and the respiratory symptoms were more marked. Cold full baths at 28° R. were then prescribed, each to be of five minutes' duration, and to be repeated whenever the rectal temperature rose above 39° R. Six such baths were employed at intervals of three hours each, and shortly after the last defervescence took place, the temperature remaining normal thereafter.

In conclusion, he lays stress upon the importance of the early institution of this plan of treatment.

NEW INSTRUMENTS.

A Taut Catgut Ligature.

By Herman Grad, M. D.,

Late House Surgeon os the Wcman's Hopital.

Before calling attention to the special feature of the ligature about to be described, a few preliminary remarks may not be amiss.

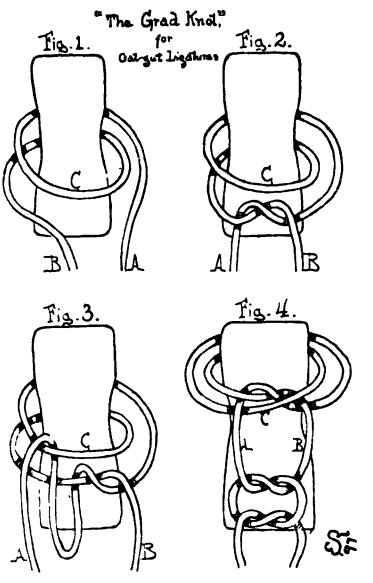
In using catgut for tying off large masses of tissues, especially in the pelvic or abdominal cavity, very often one finds a difficulty in obtaining a secure knot. This difficulty arises from the tendency which catgut has of slipping while being tied. The smoothness of the catgut and lubricated as it is by the blood during operation explains this tendency. To overcome this fault it is customary to tie a "surgeon's knot," but very often even this will be insufficient to prevent the slipping of the knot, in which case it becomes necessary to grasp the first half of the knot with forceps until the second half of the knot is completed. This, however, is not easily accomplished, as the knot is often out of reach. Against the procedure is the objection that the compression of the forceps is apt to weaken the catgut, and yet its omission at times may have serious consequences. Indeed reports have been made of secondary hæmorrhage having been occasioned by the slipping of catgut ligatures. This serious accident of slipping of ligatures can occur in two ways: First by having an insecure knot in the ligature and second by having too short a pedicle. It is comparatively easy to guard against a too short pedicle; not so, however, against an insecure knot.

The examination of a ligature reveals that its integrity depends upon the strength of its material and the security of its knot. Granted a strong ligature material, the knot is of next importance. Inquiry again shows that there are two stages in the act of tying a knot. The first stage is that in which the first half of the knot is tied, the second stage completes the knot. It is while completing the second stage that the knot relaxes. *If a secure ligature is to be obtained this relaxation must be prevented.*

A few months ago the writer devised a method for a ligature which automatically prevents the slipping of the knot, and thus a very taut

and secure ligature is obtained. The ligature has been given a fair trial at the Woman's Hospital, and I shall take pleasure in describing it as follows:

Description of the ligature.—By referring to the the four diagrams accompanying this paper the description of the ligature becomes very simple. Fig. 1 shows the first step, the placing of the ligature around the pedicle, this leaves in the ligature a free loop C. Fig. 2 shows the loop C as in the previous figure, but with the free ends of the ligature A and B, the first half of an ordinary knot, tied. The next step, which is the most important one, is shown in Fig. 3, the face end of the ligature A is carried under the loop C. The ligature is now tightened, loop C will automatically press down on the knot and prevent it from slipping. This is shown in the upper part of Fig. 4. It is plain that the more the knot is tightened the firmer will loop C press down on it. To complete the ligature an ordinary "square knot" is tied over the loop C as is shown in the lower part of Fig. 4. This will now give a very secure ligature.



Additional points about the ligature.—In the application of the ligature it is of importance to pass the proper end (A) ot the ligature under the loop C, precisely as in Fig. 3. This throws the loop obliquely across the knot while if the B end of the ligature is passed under the loop, the compresson of the knot is only accidental or the loop will press down only on one side of it. Another important point to observe is, in passing the end of the ligature under the loop, it must be done from below upwards and from within outwards as in Fig. 3. If this is not observed the usefulness of the loop is interfered with.

149 E. 116th Street, New York.

THE

AMERICAN GYNÆCOLOGICAL

AND

OBSTETRICAL JOURNAL.

APRIL, 1898.

(From the Laboratory of Pathology of the Chicago Polyclinic.)

STUDY OF AN EARLY PLACENTA *IN SITU* OBTAINED FROM THE LIVING.*

By Maximilian Herzog, M.D.

Professor of Pathology in the Chicago Polyclinic.

The observations to be reported in the present paper were made on a comparatively young placenta *in situ*, obtained under such favorable circumstances as to exclude with absolute certainty any and every post-mortem change. For the valuable specimen which forms the basis of this investigation I am greatly indebted to Prof. James H. Etheridge.

The history of the case as far as it is necessary to refer to it is briefly as follows:

On a young, respectable, unmarried woman, not suspected of pregnancy, a laparatomy for the removal of multiple subserous myomata was made by Dr. James H. Etheridge at the Polyclinic Hospital. When the uterus had been severed by a circular incision well down in the upper part of the cervix, and had been removed, part of a small bald bladder presented in the opening created by the amputation.

The specimen, as removed, was sent at once from the operating room to the pathological laboratory, with the request that I should open what appeared to be an ovum, to see whether it really was one, and whether it contained a normal embryo. The bladder, was, however, not opened, but, on the contrary, left entirely undisturbed, and the specimen as removed was immediately placed in a large quantity

* Read before the Chicago Pathological Society, December 13, 1897.

of alcohol and formalin to fix and harden it as a whole, without disturbing the relation of the parts, or giving rise to any change of pressure of the fluids contained in ovum, placenta and uterus. After being hardened in alcohol and formalin, the ovum, for such it proved to be, was opened and the specimen examined, the following being the main features of the inspection:



Fig. 1. Study of an early placenta in Situ.
(About ⅓ natural size).

There is springing from each side of the uterus a subserous myoma. Both myomata have a direction upward and outward from the median line, forming together at their attached bases an acute angle. The larger left myoma measures from base to apex about 13 c. m.; the smaller, left, one 9 c. m. The uterus itself, mostly hidden from view, seems to be enlarged to two or three times its normal non-pregnant size. Its wall appears considerably thickened. The ovum, which protrudes from the uterus, has a largest diameter from 7 to 8 c. m. The placenta, which is almost circular, has a diameter of 5 to 6 c.m. The cord is inserted markedly eccentrically, about 5 c.m. long, 2½ to 3 m. m. in diameter, and shows 8 to 10 turns.

The embryo itself is 1 to 2 m. m. less than 5 c. m. (Nackenlænge) long. The head forms more than one-third of the total length and more

than one-third of the bulk. Legs and arms are both flexed at nearly right angles to the body, the hands touch the upper part of the face and the lower part of the frontal region. In other words, the position and configuration of the embryo is such as is normal at the stage of development represented. The external genitalia seem to indicate the male sex, yet there is still a slit-like opening under what is probably the penis, but what might be the clitoris.

The embryo, as a whole, is round and plump, well-shaped, the skin is in a very good condition. Every feature of decay, maceration or compression is absent from the fœtus.

The age of the embryo, I think, is from nine to ten weeks, nearer probably to the former than to the latter period of time.

After the specimen had been hardened *in toto* cubical pieces from 1 to 1½ c.m. long were cut out from the margin of the placenta, as well as from a central place near the insertion of the cord (including part of the muscular coat of the uterus). Also pieces from the membranes near the placental margin, and from the antiplacental pole of the ovum. These pieces of tissue were dehydrated in absolute alcohol, and subsequently embedded in paraffin and in celloidin. The stains employed for the study of the sections were hæmatoxylin and eosin, borax-carmin Van Gieson st., and Weigert's fibrin st. Besides, embedded as well as non-embedded sections were examined for hæmosiderin and hæmatoidin by the usual micro-chemical methods (hydrochloric acid; ferrocyanide of potash; sulphuric acid).

A considerable number of sections were examined, among which series of respectively 72, 50, 40, 28 and 24 section of 20 m.m. thickness, thinner sections were made for studying individual cells.

The literature upon the human placenta is such a voluminous one that I must in this paper refrain from referring to it in full, stating, however, that in two of the very best monographies which we possess upon the subject—those of Minot * and Waldeyer †—one may find full references to the numerous and often very contradictory writings concerning the placenta.

This subject has also been very thoroughly considered upon the basis of the work of others, as well as upon numerous personal observations by Webster*, in his excellent book on "Ectopic Pregnancy."†

*Minot: Uterus and embryo. Jour. of Morph. Vol. II, p. 341; also Human Embryology, New York, 1897.

†Waldeyer: Bemerk. ueb. d. Bau. der Menschen. u. Affen-Placenta. Arch. f. Microsc. Anat. Vol. 35, 1890.

Proceeeding to the minute description of our specimen, it is the *amnion*, the innermost of the fœtal membranes which first engages our attention. It is derived from the extra-embryonic somatopleure and

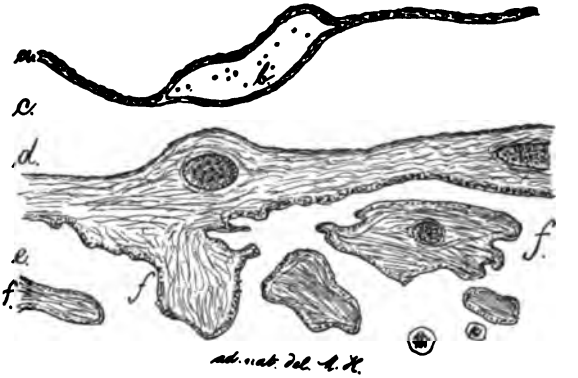


Fig. 2. (Leitz obj. No. 1; eye-piece No. 3.) a. Amnion; b. Cavity in amnion containing degenerating cells; c. Chorionic space, (space below chorion and amnion); d. Chorion with two blood vessels and one villus; e. Intervillous space; f. Villi cut transversely.

consists, therefore, of an inner layer of ectodermal tissue (epithelium) and an outer layer (looking toward the chorion) of mesodermal tissue.

Minot, I think, has furnished the most extensive and best description of the amnion, which I can confirm in its main features. My sections show the amniotic ectodermal epithelium as a somewhat irregular layer, the cells are so arranged that it might be said that they form two incomplete layers mutually infringing upon each other, rather than one well-defined, regularly arranged single layer. At least, this description is true for many places. In others, again, the epithelial cells have, as it seems, become flattened by pressure so as to form a more uniform single row. There is to be seen in many places the clear cell-free space previously described by Minot. It ought to be mentioned that the epithelium is evidently only very loosely atttached to the mesodermal layer, because it is very easily stripped off, missing, therefore, in most places, or presenting itself as detached. The nuclei of the ectodermal amniotic epithelium I find are vesicular oval bodies showing an intranuclear network. They stain fairly deeply with nuclear stains,

* Webster: Ectopic Pregnancy. Edinb. and London, 1895.

† Leopold's great Atlas upon the placenta which has just now been published in Germany has not yet been accessible to me.—M. H.

though not as intensely as the nuclei of the mesodermal cells to be mentioned presently. The cell protoplasm of the amniotic epithelium is finely granular and very distinctly vacuolated, and the cells are connected with each other by intercellular bridges. Attention has been called to this by Minot, who gives (1 c.) a picture of these cells. In my sections, however, the vacuoles are decidedly smaller than they are pictured by Minot. The intercellular bridges, I find, likewise, finer and more numerous. I agree with Minot (against other views expressed) that these intercellular processes are truly protoplasmic and not processes of a cell membrane. I think, however, that there is a certain moderate but still striking similarity beeween these ectodermal amniotic cells and the prickle-cells found in the Malphigian layer of the adult epidermis.

The mesodermal connective tissue (mesenchyma) forming the bulk of the amnion, is of a type which is perhaps best characterized briefly as a very young embryonic connective tissue of an abundant homogenous stroma or matrix, in which are embedded cells with deeply staining oval, fusiform, or somewhat irregular nuclei. These cells possess mutually intercommunicating processes; they are situated in lacunæ, in vacuolated spaces in the homogenous matrix.

Near the insertion of the umbilical cord I found the following condition, which I think has not been noticed before: The membrane be-

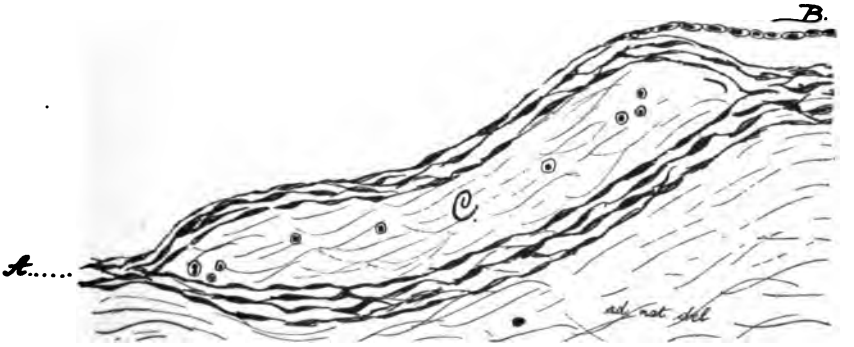


Fig. 3. CAVITY IN AMNION CONTAINING DEGENERATING CELLS (Leitz obj. No. 7, eye-piece No. 3) A. Amnion single layer; B. Epithelium lining amnion; C. Cavity contained between two layers of amnion.

comes somewhat thickened in places and then splits up in its middle into two layers. These two layers enclose a cavity. That this split is not an artefact is proven by the following: Where the split has occurred there

is usually a marked thickening of the membrane. The open cavity is bounded by fusiform connective tissue cells which form a complete flat lining. There are contained in these cavities of the amnion a number of degenerating cells, which are large and round, showing the features of hydropic swelling. Their nuclei stain very dark, they are granular, not vascular, and indistinct in outlines.

The description as given so far refers to the placental amnion. At the antiplacental pole of the ovum, the ectodermal epithelial cells were almost entirely missing, in many sections only a few flattened ones being found occasionally. The mesenchyma presents itself as a tissue composed of very much flattened wavy cells and fibers. Between this condition and that found opposite the placenta there is a gradual shading off as one goes from the antiplacental region to that of the placenta. At the latter amnion and chorion are still perfectly separate, being, as it seems, held apart by a small amount of fluid (chorionic fluid). The more one moves away from the placenta, the more closely the amnion approaches the chorion, and at the antiplacental pole the two membranes are so completely fused that the boundaries have become entirely obliterated. At the placental site, the amnion at its outer (chorionic) side possesses a distinct lining composed of a single layer of fusiform cells, but whether these latter are to be looked upon as a condensed mesenchymal, or as a mesothelial layer, could not be decided in this case. The *chorion*, from its development, is defined by Minot as "the whole of that portion of the extra-embryonic somatopleure which is not concerned in the formation of the amnion." Looking at it as a complete organ, after it has closed around the embryo and amnion, we may describe it with Schaefer* as that external membrane of the ovum from which the villi spring.

The chorion is developed from the amnion by a reflection of the latter, before it has closed completely over the dorsal surface of the embryo. The chorion, therefore, consists of an inner layer of mesodermal connective tissue and an outer layer of ectodermal epithelium.

While at a very young age the mesoderm of the chorion and that of the amnion are very much alike. In the placenta under discussion the mesoderm of the chorion frondosum,—*i. e.*, the placental chorion—is markedly different from the amniotic mesoderm.

Embedded in a homogeneous matrix we find decidedly fusiform cells with nuclei of a similar shape. These cells are arranged in par-

*Schaefer: Quain's Anatomy: Vol. I, Part I, page 43.

allel rows, their bipolar, filamentous processes being slightly wavy. The matrix in which these cells are situated is vacuolated like the amniotic stroma, but it seem that the vacuoles do not surround the cells, but are almost without exception found on one side of the cells.

The stroma of the chorion at the non-vascular areas is about two to three times as wide as the amniotic mesoderm. At the vascular parts it is, in consequence of the bulging of the blood vessels, very much thickened, and frequently six to seven times as wide as the amnion.

The blood vessels are comparatively thin-walled and simple. They show an internal endothelial lining, and around it from one to three rows of concentrically arranged fusiform cells with fusiform, or rod-like nuclei, having to all appearances the character of involuntary muscle fibers, though they are by no means as characteristic as these cells found in an adult medium-sized blood vessel. Around the cells just described there is a moderate condensation of the chorionic mesoderm.

The ectodermal epithelium of the chorion may conveniently be considered with the same structure of the villi. Where a large villus arises from the chorion the mesoderm changes somewhat in character. The cells become more complicated, instead of being simply fusiform, they become more or less stellate, and the intercellular vacuoles become very much larger. In a cross section of a larger villus the mesoderm may be described as follows: Most of the cell nuclei present themselves as fusiform, or rod-like vesicular bodies. They stain fairly deep, showing a reticular network. Around the nucleus there is found a finely granular protoplasmic cell body which sends out processes. These processes seem to interlace with each other, and the network so formed incloses numerous vacuoles, often as large as from six to seven times the diameter of a cell body. These vacuoles are undoubtedly filled with some fluid, they are therefore true "Safträume." Besides the cells just described, there is another type to be found in the core of the villi, viz., cells with a perfectly round vesicular nucleus, with a large spherical zone of finely granular cytoplasm. These large round cells do not possess any processes. The larger blood vessels found in the larger villi are identical in their make-up with the blood vessels found in the chorion. Before entering upon the description of the epithelium* of chorion and villi it should be stated that some observers have claimed that this epithelium rests upon a well differentiated basement

* Under the term epithelium of the chorion and villi I comprise collectively both layers, the "Langhaus Zellschicht," as well as the syncytium, holding with Minot, Graf Spee, Kastchenko, Hofmeier, Webster and others that they are both derived from the fœtal ectoderm.

membrane proper. I think that from the study of my specimens I can deny this claim unconditionally. On the chorion frondosum the epithelium rests directly upon the mesodermal tissue described above, the cells of which toward the epithelial lining have undergone a slight condensation, but it can in no way be said that a true basement membrane is formed. When the large villi arise from the chorion, even this slight condensation of the mesoderm disappears, so that there is absolutely nothing left to indicate a basement membrane. On the cross sections of the villi it can often be seen how the core of the villus, in consequence of the process of hardening, has retracted away from the epithelial covering. The core then often appears very sharp in outlines, because the united cell processes described previously form a well-marked external boundary line of the core. This arrangement must, I think, have been mistaken for what has been described by some investigators as the basement membrane of the epithelium of the villi.

The Epithelial Covering.—The epithelial covering of chorion and villi, which has been the subject of so much discussion, speculation and interpretation, in my specimens everywhere presents itself as a very distinct double layer. The inner layer, now generally known as the "Langhaus Zellschicht," consists of a single row of cells the outlines of which can, as a rule, be easily made out. Some observers have denied that in the inner epithelial layer the cell boundaries can be well distinguished. This, as far as the placenta under discussion is concerned, is certainly not correct. Of course, the cell outlines and boundaries are not as distinct as those of decidual cells, for instance, but they are distinct enough to be fully appreciated in favorable places. The cells of the Langhaus layer are cuboidal and sometimes short columnar, one axis being sometimes markedly longer than the other one. The nuclei are vascular, of round or oval shape. The boundaries of these cells I have best seen in medium-sized villi and in the short columnar type. I have not been able to find in my sections that the cells of the Langhaus layer do, as has been claimed, present themselves sometimes as a double or triple layer.

The outer epithelial layer, the *syncytium* or plasmodial layer, does not show any cell boundaries at all. It forms a continuous nucleated plasmodial band or mass on the outer surface of chorion and villi. The nuclei of the syncytium are, as a rule, somewhat smaller and more oval than those of the Langhaus layer. They are very densely packed side by side in the plasmodial strip. So densely are they frequently found that even in thin sections one often sees that they overlap each other. I cannot find that the syncytial nuclei are so very much richer in chro-

matin than the Langhaus layer nuclei, as has often been remarked by writers upon the subject. They are somewhat richer in chromatin, but the difference is certainly not so great as has been emphasized, probably, I think, on account of the fact mentioned, that the plasmodial nuclei often overlap each other, and then, of course, appear darker at such places where this is the case. The chromatin in both types of nuclei (Langhaus and Syncytium) shows itself in the shape of granules. The picture of a well-marked intranuclear network I have not been able to observe.

At many points of the chorion the plasmodial layer sends out buds composed of syncytium only. These buds rarely, but sometmes do, arise at right angles; as a rule, at an acute angle; sometimes they stretch out almost parallel to the surface from which they spring. These plasmodial buds are looked upon as the first stage of a new complete vascular villus, which, as is well known, form throughout almost the entire term of pregnancy. Such plasmodial buds also arise from the larger villi. They are quite numerous in all of my sections, and they have frequently been severed completely from their mother villus by the direction of the cut. They then appear to float as free islands in the intervillous space. They are, however, in reality not free islands. as can be easily demonstrated on serial sections. Some of the syncytial buds in section appear completely solid, others contain a hollow canal in the middle, others, again, are irregularly vacuolated. Where villi have become adherent to the decidua, a condition frequently found, this attachment is brought about by the syncytium. Its mass covering the villus at such a place has become greatly enlarged by proliferation of the nuclei and increase of the plasmodial substance. This tissue, which, it seems, does not contain any other elements but syncytium, forms the connective substance between the villus and the decidua. These plasmodial masses are found projecting preferably into recesses and depressions of the decidua, but they also spread out in a flat manner over even decidual tissue. It can always be noticed that wherever a plasmodial strand connects a villus with the decidua, the syncytium spreads out to a larger or less degree, and sends processes, as it were, over decidual surface. I am, however, certain that in my specimens the decidua serotina, is *not completely* lined by a layer of syncytium. Occasionally it can also be seen how a plasmodial mass has penetrated into a maternal blood space, and has become attached to its wall. I may here mention those islands found in the intervillous space and called "zellknoten" (cell nodules) by Kastchenko. They are, as can be demonstrated in serial sections, no islands at all, but only pieces of decidua

on which plasmodial masses had fastened, or into which these masses penetrated to some extent. They have, in consequence of the direction of the knife, become severed from the decidual hills, and therefore appear in sections, as islands floating in the intervillous space, similar to the apparent syncytial islands mentioned above.

The chorion at the antiplacental pole still shows numerous remnants of villi, and in some the epithelial covering can still be recognized to a certain extent. The degenerated villi are small in size, do not show any blood vessels, and of course, directed toward the decidua reflexa. The chorion at the antiplacental pole consists of wavy fibres of the same character as those before described in the amniotic mesoderm at this site. There is here no difference between the mesoderm of these two membranes, which are, as stated before, so intimately blended that no distinct boundary line can be made out.

In the *decidua serotina* we find the outer or compact layer best marked in the *middle of the placenta*, near the insertion of the cord. Toward the placental margin the compact layer becomes less and less marked, because the whole of the serotina, which here loses in diameter, is broken up by blood sinuses and enlarged gland spaces, so that it might be said that here we have only a spongy and no compact layer at all. Where the compact layer is well developed it shows those projecting hills so well described by Waldeyer. As remarked before, the adherent villi, the "haftzotten" of the German writers, are frequently seen inserted into the valleys and clefts between the elevations of the compacta, but also adherent to, or near the summits or to the sides of the hills. The compacta of the serotina is composed of those very large cells known generally as decidual cells. They are in our case perhaps not so beautiful in the serotina as they are found in the vera. However, a description of them may be given at this point. The *decidual cells* are generally more or less oval or fusiform in outlines; some seem to be almost spherical. Their protoplasm is finely granular, and one occasionally sees processes connecting neighboring cells with each other. The cell boundaries are very sharp; in fact as sharp a boundary is perhaps rarely seen in any other kind of cells. This, it appears to me, is due to the fact that the decidua possesses an unusually large amount of a homogeneous intercellular substance. The nuclei are large vesicular bodies, round or oval, poor in chromatin, and show very distinctly the nuclear membrane. The great majority of these cells contain one nucleus only, some two, few three nuclei. More than three nuclei in a decidual cell I have not found. The multinuclear giant cells, said to be found during the more advanced period of pregnancy, I have not

seen in my sections. A second kind of cells is found wherever we have deciduál tissue, viz., small, round cells, which I will call leucocytes, though I am not certain whether they are, or whether they are connective tissue corpuscles, the so-called "wanderzellen" of the connective tissue. The leucocytes are, of course, very easily recognized in decidual tissue, as they are so very much smaller than the decidual cells proper. These leucocytes, which may be seen anywhere in decidual tissue, are greatly increased at the margin of such places where the decidua is showing necrotic changes. This condition is already found extensively in the serotina of our placenta. In such places the decidual cells have almost completely disappeared, or we only find non-enucleated, poorly defined cell remnants; the tissue has become more or less completely structureless and uniformly homogenous and hyaline. Around such decidual tissue showing the evidences of coagulation necrosis, there is an abundant accumulation of leucocytes, with deeply staining granular nuclei. Quite a characteristic feature of this small, round cell infiltration is the fact that many nuclei are found in the process of nuclear fragmentation. I think that this picture misled Eden* to assume that the decidual cells themselves disappear by becoming smaller and by finally undergoing nuclear fragmentation.

The picture furnished by the leucocytes in the process of nuclear fragmentation found in connection with degenerating decidual tissue is so highly characteristic that it has served me to recognize otherwise entirely changed decidua, as it is frequently found in the blood coagula formed after rupture or abortion in ectopic pregnancy.

If a theoretical consideration be permitted, it may be stated that the finding of necrotic places in the serotina of the early placenta strongly favors the view that the main physiologic function and importance of the decidua is limited to the very earliest term of gestation only. After the formation of the intervillous space and the establishment of the fœtal circulation in the chorionic villi the human decidua, as far as the nutrition of the embryo is concerned, only plays a very unimportant rôle, or none at all.

Under the compact layer we find in the decidua the *spongy layer*, showing many and large open spaces. These latter are enormously enlarged uterine glands. In the spongiosa of the serotina of our specimen these gland spaces *have no* connection with the intervillous space. In the formation of the decidua serotina, it appears to me that the original openings of the glands become at a certain time

* Eden: A Study of the Human Placenta. Journ. Pathol. and Bacteriol. 1894-96. Vol. III, pp. 449-471.

obliterated or closed, in consequence of the proliferation of the decidual cells. The deeper and very much enlarged parts of the uterine glands become the gland cavities in the spongy layer. They are, in our speci-

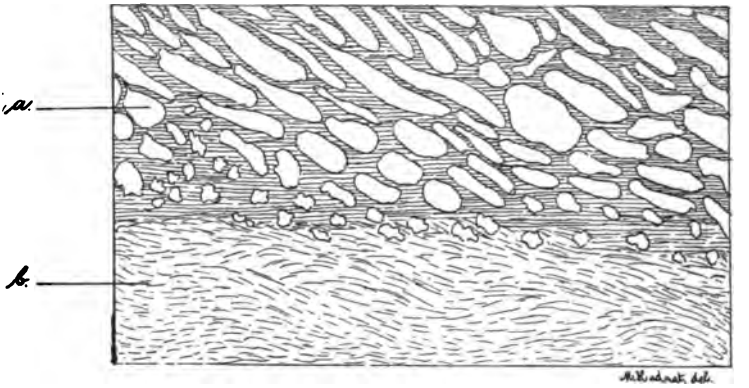


Fig. 4. SPONGIOSA OF SEROTINA. (Leitz obj. No. 1, eye-piece No. 1.) a. Spongiosa with large gland spaces; b. Muscular coat of uterus.

men, of oval outlines, sometimes very long clefts, partly lined by epithelium, partly void of it. In some few places the epithelium is so well preserved that even its ciliæ can be seen, in others it has become flattened, or has degenerated completely, so that detached cell remnants only are seen. Many of the cavities in the spongy layer contain such degenerating epithelial cells or hyaline balls or spheres, or both of these elements. In the deepest layer of the spongiosa these cavities, now already partly surrounded by muscular tissue, present the following appearance: They are not long-stretched clefts, but more or less round in outlines, their walls are folded toward the lumen, the epithelial lining is well preserved. One beholds such a picture as is frequently seen in glandular hypertrophy of the uterine mucous membrane of a very marked type. The folding of the gland walls is due, in the case of the decidua, to the same cause that brings it about in the pathologic condition referred to. The gland wall—*i. e.*, its basement membrane—and epithelium have grown more rapidly than the surrounding tissue, consequently foldings are formed toward the gland lumen.

The gland spaces are separated from each other by a tissue composed of decidual cells. Often the separating tissue has become a mere narrow bridge or strip. The narrower these bridges the more the decidual cells are changed from their most characteristic type. They become smaller, more elongated, finally truly fusiform, so that they can hardly,

if at all, be distinguished from what they originally were—ordinary fusiform connective tissue cells.

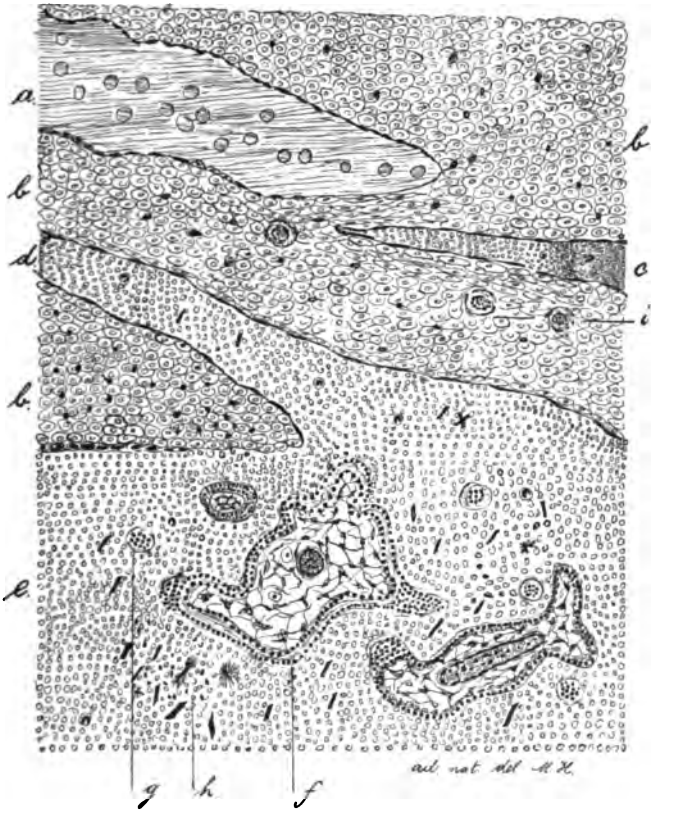


Fig. 5. DECIDUA AND INTERVILLOUS SPACE. (Leitz obj. No. 3; eye-piece No. 3.) a. Gland space, filled with mucoid material and hyaline spheres; b. Decidua serotina; c. Blood space in serotina (venous sinus); d. Maternal blood vessel (utero-placental vein) opening intervillous space; e. Intervillous space; f. Villus with blood vessel cut transversely and therefore appearing as an island unconnected with its villus; h. Hæmatoidin plates and needles; i. tortuous artery in decidua serotina cut transversely in three places.

The gland spaces of the decidua, I find, are more or less filled with cell remnants, and, as remarked before, with mucous or a homogeneous hyaline material. They are certainly not filled with blood, as Gottschalk has stated.* This author has twice had a chance to examine a placenta *in*

*Gottschalk: Weitere Audien ueber die Entstehung der mensch. Placenta Arch. f. Gyn., Vol. 40, 1891, p. 169.

situ, obtained *per operationem* by Landau from the living. But in both cases the specimen was not handled in such a manner as to exclude hæmorrhages into places where they might afterward be mistaken for normal conditions. In one case particularly, the uterine wall was perforated, the ovum torn open, the embryo decapitated and a hæmorrhage produced into the amniotic cavity. Gottschalk must either have mistaken the true blood sinuses for gland spaces, or in his cases the blood, if indeed found freely in gland spaces, had gotten there in consequence of a traumatic hæmorrhage.

In studying the utero-placental blood vessels in my specimen, I have found that the veins form large blood sinuses in the decidua, as has especially been pointed out by Waldeyer. The walls of these blood sinuses finally lose all their constituents, except the endothelial lining, and they run almost parallel to the surface of the decidua, and open as wide slits into the intervillous space. I have, however, not been able to trace any vessel with the characters of an artery into the intervillous space. While my specimens show in the decidua itself, somewhat distant from its surface, arteries with their characters as described by Waldeyer ("bindegewebsscheide," great tortuosity, etc.), I could not trace anything with the characters of an artery into the intervillous space. I think that the arteries, just like the veins, lose their walls so completely that they cannot be recognized any more as arteries. Waldeyer made his studies on double injected specimens, where these things could, of course, be more easily distinguished; in my specimen, for obvious reasons, no injection was made.

The specimen under discussion also shows how the endothelial cells of blood sinuses opening into the intervillous space are continued for a certain distance over the surface of the decidua. Yet I cannot find that the whole surface of the serotina is lined by endothelial cells. One often finds on the serotina, even in places distant from the opening of a vessel, flat cells, but I consider them as remnants of the much-changed original epithelium lining the non-pregnant uterine cavity. I base this view upon the observation that such very flat cells I found high up on the surface of the vera, where it had been strongly compressed upon by the growing ovum. In this situation those flat cells can neither be vascular endothelium nor changed syncytium; they must be changed uterine epithelium. As to the claim of Waldeyer and Keibel that the whole of the intervillous space is lined by vascular endothelium, I most certainly must dispute this, since my specimen does not show anything to confirm this assertion. There is certainly no endothelial lining over and above the syncytium of the chorion and the

villi. The *decidua vera* may be very briefly described. It consists, like the serotina, of a compacta and a spongiosa. On the gland spaces the epithelium is generally more or less preserved. They are filled with mucus, etc., like the same spaces in the serotina, and occasionally a gland duct still leads to the surface, but it is, however, as a rule, closed by the apposition of its walls. The vera is lined by a complete epi-

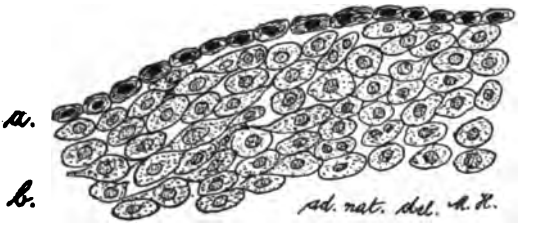


Fig. 6. DECIDUA VERA. (Leitz obj. No. 7, eye-piece No. 3.) a. Flattened uterine epithelium; b. Typical decidual cells, some showing two nuclei.

thelial coat. High up, where the vera has been compressed upon very much by the ovum, this epithelium is, as remarked above, very flat; lower down it becomes cuboidal. Cylindrical cells or ciliæ are, however, not seen. The blood spaces of the vera are large, though not as large as those of the serotina. Of course, they do not open on the surface, but are closed. The gland spaces next to the muscular coat are like the analagous spaces in the serotina. The vera, like the serotina, shows patches of tissue in a process of coagulation necrosis.

The substance known as *canalized fibrin*, which, in the latter stages of pregnancy, is found in great abundance on the surface of the serotina, is already found, to some extent, especially near the margin of the placenta. Besides other stains employed for its study, Weigert's fibrin stain was used. While it did not prove fully satisfactory, it was of some service. It seems that the formation of the fibrin started in the decidua reflexa, extending from there to the margin of the placenta, and to its middle. It appears further, that the fibrin is first deposited between layers of degenerating decidual cells. The fibrin, I think, is derived mainly, if not entirely, from the blood of the intervillous space. There is no fibrin found on the vera, where we have no intervillous space.

The *decidua reflexa* in our specimen arises gradually out of the serotina by a gradual change of direction. The serotina as it approaches the margin of the placenta becomes thinner and thinner, the decidual cells become less characteristic, smaller and more closely packed, more fusiform with their long axis parallel to the long axis of the membrane;

the leucocytes are increased in number. At the same time, chorion and decidua serotina approach each other more and more, and the intervillous space becomes gradually shallower. Finally, chorion and decidua reflexa touch each other. The latter consists almost entirely of a hyaline tissue which still shows some fine parallel wavy fibrillation. The greater the distance from the point where the decidua reflexa arises out of the decidua serotina—in other words, the more one approaches the antiplacental pole—the thinner and the more uniformly hyaline the reflexa becomes. Even, however, at the antiplacental pole, the substance of the reflexa shows blood spaces (sinuses) still containing the remnants of blood. These are evidently what is left of a once very vascular early decidua reflexa.

It has been mentioned before that the chorion at the antiplacental pole still bears small degenerating villi. These latter, which are here attached to, or rather pressed against, the antiplacental part of the reflexa, are surrounded by small blood spaces. These were once a part of the general intervillous space, now confined to the placental area, but once surrounding the whole of the chorion.

The *intervillous space*, which is bounded on one side by the chorion, on the other by the decidua serotina, and which contains the adherent as well as the floating villi, contains *maternal blood*. This fact to-day is cenceded by every competent observer. The first one who clearly maintained that this was the case was E. H. Weber *. Since he made this assertion this view has been alternately confirmed and contested, until finally, in consequence of the investigations of Waldeyer, Langhaus, Nétabusch, Minot, Leopold and others, it has now been universally adopted.

In my sections the intervillous space is everywhere filled with blood, which, as was stated above, can be easily traced to the maternal blood sinuses.

The maternal blood, as found in the intervillous space, offers some very obvious points of differentiation from the fœtal blood, as it can be studied in the blood vessels of chorion and villi. The fœtal blood is very much richer in nucleated corpuscles than the maternal blood. In fact, in the former, the proportion of the nucleated corpuscles to the non-nucleated erythocytes is very much increased beyond what is found in adult normal blood, rising perhaps as high as 1:50 or even higher. The nucleated corpuscles are partly nucleated red ones, partly leucocytes. Nucleated red corpuscles do not seem to be very numerous, though

* Weber: Hildebrandt's Handb. f. Anat. des Menschen. IV. auft. Vol. IV., page 490.

I am not very positive about this, since the differentiation between a mononuclear white and a nucleated red cell is quite difficult, and, as it seems, uncertain.

Another point I have noticed in connection with the fœtal blood in the placenta, is the almost entire absence of polymorphonuclear leucocytes, almost all of the white corpuscles being of the small mononuclear type.

It also appears to me, judging from the effect of eosin stain in saturated glycerine solution, that the fœtal red blood corpuscles are richer in hæmoglobin than those of maternal origin, as found in the intervillous space. In the latter, the proportion of the white to the red blood cells does not seem to show any great changes from the normal. The white corpuscles in the intervillous space are mostly of the polymorphonuclear variety.

The above observation may furnish another, though perhaps at this date, hardly needed proof, that the blood in the intervillous space is not the same blood as that in the fœtal blood vessels. Blood of maternal origin as found in the intervillous space is of quite a different type and composition from the blood of the embryo.

I now come, in conclusion, to another observation—as far as I am aware not made by any previous investigators, and not recorded in the literature upon the placenta. This observation seems to me to be of a good deal of physiologic as well as pathologic interest.

The intervillous spaces, nomal and unaltered, by any post-mortem changes, as they must be from the manner in which the specimen was obtained, and prepared, contain a very considerable number of *hæmatoidin plates and needles.*

The examinations for these derivatives of degenerating red blood corpuscles were made on stained and unstained sections, and on non-embedded pieces of tissue. The hæmatoidin presents itself in the form of rhombic plates and clusters of very fine needles. Often one sees a mass of hæmatoidin like a plate, but thicker and less regular, somewhat club-shaped on both ends and constricted and lighter in color in the middle. Such forms consist of a plate, both ends of which are thickly beset with fine needles. The picture reminds one of a straight magnet which has been dipped in iron filings, these having been attracted by and collected around the two poles. Thin plates of hæmatoidin are yellowish-brown in color, and so are the points of the needles which stand out around the darker center of the star-shaped clusters. All of these crystals give the typical hæmatoidin reaction with the sulphuric acid test.

The hydrochloric acid, ferro-cyanide of potash test for hæmosiderin was negative; this iron-containing waste-product of degenerating red blood corpuscles was not found.

The hæmatoidin is, as stated, found all over the intervillous space; it is also found in the canalized fibrin, in the most superficial layers of the serotina, and also to a slight extent in the superficial maternal blood sinuses of the serotina, also in the small blood space between the chorion laeve and decidua reflexa.

Nowhere is this hæmatoidin found in fœtal blood. The chorionic vessels and those of the villi are absolutely free from it. This fact is quite important, as it proves, aside from the nature of the specimen, that any idea as to a post-mortem nature of the hæmatoidin found can and must be discarded. Hæmatoidin is evidently formed in the maternal blood circulating very slowly in the intervillous space, and found only there and in its immediate neighborhood.

It ought to be remarked that in order to carefully study the exact distribution of the hæmatoidin and not to be misled by a few crystals carried into a foreign territory by the cutting knife, the latter must be carried over the block first in one and then in another direction.

It appears that the finding of a derivative of decomposing blood in the intervillous space of an early placenta is of a good deal of interest. It seems to prove, in the first place, that this space is not simply a maternal blood space, is not, as has been claimed, lined by vascular endothelium. If it were, there is no reason why the blood should decompose in it even if the circulation is slow. As far as I am aware, blood circulating inside of a properly lined blood channel never decomposes to such an extent that a large amount of hæmatoidin is formed.

But the blood in the intervillous space is only partly enclosed by maternal tissue, and by no means contained throughout in vascular endothelium. Therefore, the blood has a tendency to change and to decompose. The presence of hæmatoidin also speaks strongly for the assumption that the canalized fibrin is likewise a derivative of the blood in the intervillous space.

The question arises, What becomes of all of the hæmatoidin formed during pregnancy? It will certainly not all be deposited where it is formed, because some of it was found in the maternal venous sinuses in the serotina. It therefore appears that some of this hæmatoidin, at least, is taken up by the blood current and carried through the utero-placental veins into the general maternal blood current. It is probable that the hæmatoidin so taken up will be carried throughout the right side of the heart to be deposited in the lungs. If this is the

case, we ought to be able to find it there after death occurring during or after pregnancy. This task might be made somewhat difficult on account of the anthracosis usually found in the lungs of adults. Of animals which could be used experimentally to investigate this point, I think the only available ones would be those primates of which it is known that their placentæ are like the human one. Rodents could not be used, since their placentæ are of quite a different type. It would hardly be proper to theorize whether or not some of the subjective symptoms of pregnancy might be dependent upon the presence of hæmatoidin circulating in the maternal blood. But it seems reasonable to consider as very probable, a causal relation between the presence of hæmatoidin in the circulation of pregnant women and the peculiar marked frequency of embolism and thrombosis during gestation, and post-partum. In giving a short review of the above report, facts either not observed previously by other investigators of the subject, or facts noted previously but not yet confirmed, or details in which I differ from other well-known writers upon the placenta may now here be briefly recapitulated:

1. In the amnion, near the insertion of the cord, there were found small cavities contained between two layers of amniotic mesoderm. It is possible that these small cavities are due to a reduplication of the amnion occurring at a very early stage of its foundation.

2. The chorionic epithelium, and that of the villi, presents itself in two very distinct layers, each of characteristic differentiating features. The Langhaus "Zellschicht," has been found in a single cell layer only, nowhere as a double or a triple layer. The epithelium does not possess a basement membrane.

3. Plasmodial (syncytial) buds springing from chorion and villi are very abundantly found. Plasmodial islands in the intervillous spaces do not exist; what appears as such are buds separated from their bases by the direction of the cut of the knife.

4. Kastchenko's "Zellknoten" are likewise not at all islands floating in the intervillous space, but decidual and syncytial tissue detached from the decidua in the same manner as the buds are detached.

5. The chorion at the antiplacental pole still shows remnants of villi.

6. The decidua serotina, as well as the vera, show already patches of tissue in a state of coagulation necrosis. Where this latter is manifest, there are found numerous leucocytes, many of which are in a process of nuclear fragmentation.

7. The decidua reflexa is in that stage of degeneration, as has been first minutely described by Minot. (1. c.)

8. Evidences are still found in connection with the decidua reflexa, which prove that it once was very vascular and that the intervillous space filled with blood once surrounded the whole ovum.

9. The decidua serotina is not throughout its whole extent lined by vascular endothelium, nor have chorion and villi such a lining.

10. Changed remnants of the original uterine epithelium are occasionally found on the surface of the serotina and everywhere on the surface of the vera.

11. The open spaces of the spongiosa, the changed uterine glands show epithelium varying from the normal to a stage of complete degeneration, and these spaces are not filled with blood, but with mucoid or hyaline material, cell remnants and hyaline spheres.

12. The intervillous space contains maternal blood which in its corpuscular elements is very different from the fœtal blood found in the blood vessels of the chorion and villi.

13. The main, if not the exclusive source of the canalized fibrin, is the maternal blood in the intervillous space.

14. In this space are also found numerous hæmatoidin crystals; these insoluble derivatives of degenerating red blood corpuscles are in part carried into the utero-placental veins, and from there into the general maternal circulation. They stand most probably in a causal relation to the comparative frequency of embolism and thrombosis during pregnancy and post-partum.

Having been engaged for some time in the study of the early placenta and having examined placentæ and ova from two weeks to several months' old, I have above occasionally, though rarely, referred to conditions found at different stages. In order to avoid any misunderstanding, I want to emphasize that the observations recorded refer to the one placenta only. The favorable circumstances under which it was obtained seemed to warrant its separate description, which I hope I will soon be able to follow up by a comprehensive paper on the histology and development of the early placenta.

NOTE.—All cuts in the above article, except the first, have been reduced one-third from the original drawings.—EDITOR.

FOREIGN BODIES ACCIDENTALLY LEFT IN THE ABDOMINAL CAVITY DURING THE COURSE OF CŒLIOTOMIES.*

By Herman J. Boldt, M.D., New York.

I shall confine myself to those cases in which the foreign body was not known to have been accidentally left in the peritonæal cavity at the conclusion of a respective operation, limiting the cases to such, in which the mishap was discovered subsequently.

It is not at all unusual that foreign bodies are accidentally left in the abdominal cavity after cœliotomies, and that such bodies are afterwards removed by secondary operation, or cause death without the fact of their presence having been recognized or suspected, until at the time of the autopsy.

The two instances which I have observed in my practice are the following: Total extirpation of the uterus and adnexa for cancer of the uterus. A gauze strip was lightly packed in the pelvis, which was ordered to be removed by the house surgeon per vaginam, three days subsequently. This I was informed had been done, but it was not noted that another had been replaced. The patient, however, made an uninterrupted recovery from the operation. A few weeks after leaving the hospital she began to complain of much pelvic and abdominal pain of a griping character, and persistent constipation. About two months later she brought me a strip of gauze which was passed with a fæcal evacuation. Her constipation and pain disappeared entirely after this.

The only explanation which I can make is that the doctor had replaced another gauze strip after removal of the first, beyond the edges of the vagina; that the vagina closed below the gauze and that he thought it had been removed.

Case 2.—During the early part of 1897 I did an abdominal hysterectomy for a myo-fibroma. The convalescence was protracted on account of an abdominal wall abscess and phlebitis. After healing of the wound the patient was discharged; still there was a complaint of constant pain midway between the umbilicus and epigastrium. I saw the woman again in October, 1897 and found a swelling at the seat of pain,

* Read before the New York Obstetrical Society, February 8, 1898.

which impressed me as being a mass made up of omentum and coils of adherent intestines; the abdominal parieties were indurated, due to inflammatory changes and moderate suppuration. Operation was again proposed, and on November 3, 1897, the abdomen was reopened.

The diagnosis, so far as could be seen, was correct, but unfortunately, owing to the condition of the patient, who was rapidly sinking as the disentanglement of the intestines progressed, the operation could not be completed, and the wound was closed. An abdomino-intestinal fistula resulted, and her condition, if anything, was worse. It was evident that a fatal issue would certainly follow is relief was not obtained. The condition having been fully explained to those most concerned, I reopened the abdomen on January 10, and after unusual difficulties, during which the tortuously agglutinated intestines were injured five times, a portion of bowel presented itself, distended to an unusual degree, with what felt like fæcal matter of clayey consistency. On looking into a rent of the intestine near the distended portion of gut, a gauze webbing discolored by fæces was seen, which, at first thought, I considered to be a pad which I had placed behind the intestine, but on looking more carefully over the field of operation, it was found that the small corner of gauze appearing was in the calibre of the bowel. On withdrawal it was found to be this large gauze serviette, such as is used to hold back intestines during abdominal sections; the distended bowel then collapsed, showing that it was the foreign body causing the distension. It is saturated with thin fæces from the small intestine in which it was impacted.

The operating nurse in some way to me not clear made an erroneous report at the time of the first operation. The protracted convalescence was due to the inflammatory changes caused by the foreign body gradually perforating the bowel. This inflammation, however, also caused the dense agglutination and tortuousness of the intestines, so that the foreign body, being lodged in the small bowel, could not be expelled in the natural way, and therefore caused chronic intestinal obstruction, from which the patient suffered so long.

The portion of intestines which had been injured several times was resected and the anastomosis made with sutures, the abdomen thoroughly cleansed and the wound closed. Despite, however, of various therapeutic measures employed, the woman did not rally from the shock, from which she died between two and three hours after removal from the table.

A. MacLaren, Annals of Surgery, September, 1896. After an oöphorectomy and hysteropexy the patient had obstinate constipation. On the

tenth day the bowels moved, and in the evacuation a gauze pad was found. After this convalescence was uninterrupeted.

In a second case Dr. MacLaren did a supra-vaginal amputation of a fibroid uterus, from which the patient made a rapid recovery. However, pain and symptoms of irritation, with occasional elevation of temperature remained. After the lapse of two years a swelling formed in the right lumbar region, directly above the kidney and upon another section, an artery-clamp was found in the bowel, which, with its point, penetrated into the somewhat enlarged appendix. The bowel was opened and the clamp removed. Recovery.

Anonymous. Révue des Malad. des Femmes, April, 1892. Eight months after an abdominal section for fibro-myoma a gauze compress 26 cm. in length and folded four times upon itself was spontaneously voided per rectum. The patient did not begin to complain until four months after operation. The perforation of the pad into the bowel, however, was not accompanied by severe symptoms.

In the case of a young woman upon whom a salpingectomy had been performed, but who continued to complain intensely, a vaginal hysterectomy was done. Still the pains continued, and after a lapse of several months another cœliotomy was made. In attempting to separate the intestinal adhesions, the bowel was injured, and through the perforation a gauze strip 35 cm. in length, also folded four times upon itself, was extracted. A piece of bowel 10 cm. in length was resected on account of the injury. An intestinal fistula which resulted subsequently healed spontaneously.

In two other instances a similar error was detected soon after operation and the patients were returned to the operating room and the foreign bodies removed. In one it was a sponge and in the other a clamp.

M. Salin, in Hygiea, 1891, No. 12, reports an instance in which, one year after he had performed an ovariotomy, the lower portion of the abdominal wound opened spontaneously, an abscess having formed there, from which a large quantity of foul-smelling pus was discharged; on more careful examination a large gauze compress was withdrawn from the cavity. On the following day a considerable quantity of fæces from the small intestine was discharged through the fistula. The fistula finally healed spontaneously. How such mishap occurred in this case is almost incomprehensible, because the counting of the compresses, both before and after operation, is not entrusted to one person; they are counted four times by different attendants.

Dr. H. P. C. Wilson, of Baltimore, in a paper before the American Gynæcologic Society in 1884, on foreign bodies in the abdominal cav-

ity, cites altogether thirty cases which he had been able to collect, the majority of which were European cases, but of these only five instances had been published, showing that members of the profession are reluctant to make their mishaps in this direction known to their colleagues. Dr. Engelman, in discussing the paper, reports an additional case of death from a sponge accidentally left in the abdominal cavity.

Dr. L. Elsner, of Syracuse, reported a case to the State Medical Society of New York in 1895, in which an abdominal hysterectomy had been performed by a prominent gynæcologist of this city in one of our largest and best equipped hospitals, in March, 1893, and after an uneventful recovery from the operation various symptoms began to manifest themselves the following July, finally increasing to such degree as to cause complete intestinal obstruction, for which operation had been contemplated and preparation made for, but shortly before the intended operation flatus passed, and soon afterward a fæcal evacuation ensued; with the next movement from the bowels, on September 26, a large gauze pad was evacuated, just six months subsequent to the hysterectomy.

Dr. Henry C. Coe, in an article on the tolerance of the peritonæum to aseptic foreign bodies, in the New York Polyclinic for April, 1897, remarks that he could have added five cases to those of Dr. Wilson, in which death occurred from septic peritonitis, found upon autopsy to be due to a large flat sponge having been left in the abdomen. These cases were from four different operators and had never been published. He adds another interesting case of a vaginal hysterectomy, in which thirty-six hours after the operation it was discovered that a sponge had been left in the pelvic cavity by slipping off a sponge holder. A cœliotomy was performed, and after a long search it was finally found under the liver. The patient recovered.

Dr. W. T. Bull also published a fatal case from a sponge, in report on operative surgery in New York Hospital, page 8.

The pathologist of one of our leading hospitals informed me of two additional instances of foreign bodies left in the abdominal cavity; one a clamp and the other a sponge, neither of which had been reported, and in fact the clamp, which had been placed in the pathological museum, was ordered removed, because of its stain on surgery.

There is no doubt in my mind but what such accidents have occurred very much oftener than anyone knows, but unfortunately, for obvious reasons, the cases are kept secret. Formerly, before the days of strict aseptic surgery, and when sponges were used more than now, deaths from this cause were not a rarity, as anyone can testify who has

investigated the matter. There is absolutely no good reason to endeavor to hide such mishaps; on the contrary, they should be published as a warning, and the lesson derived from such deplorable accidents can only be a gain to operators, calling constantly for the utmost care and control of instruments and sponges, or what may utilized for the latter purpose.

I have been informed, since making inquiries into this matter, of five additional cases occurring in this city, in which the foreign body accidentally left in the abdomen caused death. The cases not having been published, I must refrain from mentioning details.

The perforation of such body into the intestines does not seem to be accompanied by any special symptoms, and unless the substance finds its way into the small intestine, the chances for its eventual expulsion per vias naturalis are favorable. If they do not perforate the bowel, they as a rule, find their way to the surface in the course of time, then produce local symptoms which will lead the surgeon to make an investigation, probably making an incision which will disclose the offending body. In some instances the foreign body will work its way to the scar made by the primary operation, and by the inflammatory process cause a fistula, thus disclosing the nature of the case, if the tract of the fistula be enlarged.

The question which confronts us is: How can such accidents be prevented? We all agree that it is improper to use small pads or sponges as temporary packing; that it is necessary to have the number of sponges or pads and the clamps counted before and after operations, yet it has been shown by experience that this does not give absolute security against the occurrence of the accident in question. Dr. Gerster, who has a very large experience in abdominal surgery, writes me that he believes the mishap is due to haste or loss of coolness when operating in the presence of complications, notably hæmorrhage. This is surely not the case in any of the instances personally known to me, inasmuch as each of the operators referred to are men who work most deliberately, no matter how trying the circumstances may be. A rule followed by him and others, which prevents the occurrence of leaving a clamp or forceps in the abdomen, is to ligate every vessel immediately after it has been secured with clamp or hæmostatic forceps.

Dr. T. G. Thomas, in the discussion of Dr. Wilson's paper, advocates the attachment of a tape to all sponges left in the abdominal cavity for protection, the long ends of which are left externally, thus avoiding the danger of oversight. Dr. W. T. Bull informs me that such plan is pursued by him.

The method which I have lately adopted with utmost exactness in my practice is: Small pads as a temporary tamponade are discarded entirely; in the pelvis, if a small area is to be temporarily tamponed, I use a long strip of gauze, and to its end a long clamp is left attached, or the end is left sufficiently long that it remains externally a distance sufficiently long to prevent it from slipping into the abdominal cavity. For the purpose of protecting the peritonæal cavity in toto, sterilized towels are used in preference to the gauze compresses; for smaller surfaces to be protected, large gauze compresses are used, to which a long piece of silk or tape is attached, to the end of which a pair of forceps is applied. *No pad, of those counted for the operation, is permitted to be torn or cut to meet an emergency,* thus insuring against a double count. *No pads are permitted to be thrown on the floor; they must all be placed in a receptacle for that purpose,* if entirely discarded for further use during the operation. *All pads and forceps are controlled by double count before the beginning and at the conclusion of an operation.* In the event of a large number of small pads being required, they are *never* left in the cavity at all, but *immediately* removed when they have served their purpose. It has been shown in experience that errors are apt to creep in if pads or sponges are cut or torn, of those set aside for the respective case, otherwise it would be impossible to leave one behind, when the count is *accurately* controlled. The attachment of tapes prevents unnecessary handling of the abdominal contents in looking for a missing compress. The use of a receptacle for compresses and pads saves time in the recounting when the operation is completed. The abdomen should never be finally closed until all pads and towels have been accounted for. I prefer to supervise the controlling count personally, or let it be done by a *reliable* assistant. I believe that in the future such experience as I have had will not be apt to occur by the observance of the rules above enumerated.

PREGNANCY AND LABOR COMPLICATED BY ANTERIOR FIXATION OF UTERUS.*

By G. M. Boyd, M.D.

Lecturer on Obstetrics to the Medico-Chirurgical College; Physician to the Philadelphia Lying-in Charity.

Ventro-fixation was welcomed not many years ago, for we felt that at last a positive means for curing the retroverted uterus had been found. The early operations surely accomplished the purpose sought for. The uterus was firmly fixed to the anterior abdominal wall, by sutures, in some cases, in addition to this, extensive scarifications, producing strong fibrous adhesions. The results of these operations were most gratifying. The symptoms complained of disappeared rapidly. All went well until we began to hear of complications developing during pregnancy and labor.

Complications causing so much obstruction by the firm anterior wall of uterus that at times the more serious operations in obstetrics were demanded in order to accomplish the delivery. With the news of these complications, cases which only time could produce, we find now the various operators modifying the procedure, some using a single stitch to fix the uterus, and others removing all sutures in two weeks, and third including only the peritonæum in the tension suture, so on, we might mention the various operations, all having the purpose of obviating the complications in future pregnancy and labor. Anticipating the danger of future trouble, some operators have made the attachment to abdominal wall so slight that I fear a careful examination in a certain proportion of cases might find the uterus just where it was before the operation and the patient complaining again of her old symptoms.

I admit that the uterus, fixed by suitable ligamentous attachment to the abdominal wall, may not disturb future pregnancy and labor, but that the operation should be done in the right way and that it should be carefully considered where pregnancy is possible the following cases will illustrate.

Case I.—Mrs. W. was admitted to the Philadelphia Lying-in Charity June 9, 1897. She has had one child at term. Two years ago

* Read before the Philadelphia Obstetrical Society, Feb. 3, 1898.

ventro-fixation was performed. She has had two miscarriages since then and she comes to us pregnant for the fourth time, the uterus now carrying the fœtus to term. She states that she fell in labor eighteen hours prior to admission and that her physician had twice applied forceps without success. The patient is much exhausted from the long labor, she has fever and rapid pulse, the fœtal heart could not be heard. Internal examination revealed the cause of the dystocia. The posterior lip of the cervix was drawn up and posterior, the anterior cervix and uterine wall acting as an obstruction to the engagement of the cephalic extremity. With the long labor, death of infant and excessive moulding of the presenting part, it had at last made some descent. The patient, in bad condition, was anæsthetized and the œdematous and injured cervix was first dilated, forceps were now applied to the much moulded head, and with not great axis traction she was delivered, infant weighing seven pounds. The lacerated cervix could be now easily felt, and the thickened anterior wall of the uterus which caused the obstruction.

After as careful a toilet as was possible with the patient in so bad condition, she was put to bed. As might have been expected, she deveoped a rapid putrid infection, with high temperature, rapid pulse and offensive lochia. The anterior lip of cervix sloughed off, and with this a portion of the floor of the bladder. A vesical incontinence was now explained in a fistula.

Slowly she improved, but it was not until one month after her delivery that she was in condition to make a repair of the bladder injury.

The fistula was found high up to the left side of cervix and communicating with an extensive laceration of the latter. It was first necessary to repair this laceration, then the fistula was closed with silver wire sutures. The stitches were removed in two weeks and patient discharged in good condition.

Case II.—Mrs. W., aged 33 years, was admitted to the Philadelphia Lying-In Charity January 15, 1898. She has had three children, all living. Three years ago one ovary was removed and ventro-fixation performed.

She menstruated regularly after this operation until May 18, 1897. After missing her first period she had a show every two weeks for three months. Fœtal movements were felt in September. In December there was a show, with great pain, for three weeks, and at the same time there was lumbar pain and irritation of bladder and ureters. A constant dragging pain in the sacral region, with lancinating pain at times. Both inguinal regions were the site of continuous pain, but it

was most severe in the left side and down the thigh. On admission she was found to be pregnant seven and one-half months. The ovoid was presenting by the breech. Internal examination was accompanied with pain, the cervix was difficult to reach, having been drawn upward and posterior. The anterior wall of uterus was much thickened and seemed to offer an obstruction to the engagement of presenting part. External version was performed and the patient kept in bed with lateral compresses to the uterus. We succeeded without much difficulty in keeping the head at the pelvic inlet.

Fearing that to allow the patient to go to term we might have greater trouble, it seemed wise to induce labor at the eighth month. This was carried out January 29, 1898, by introducing two rubber bougies into the uterus. This was followed by slight pain and an unfortunate rupture of the membranes, the pains gradually became more frequent and severe, but were not accompanied with dilatation. After fourteen hours without any real progress the cervix dilated to the size of a quarter dollar. We gave ether and terminated the labor with forceps.

Some difficulty was experienced in dilating the cervix.

During this operation it was noticed that although the fœtal heart had been closely studied during her labor, the waters were stained with meconium, we feared the death of the infant, and unfortunately we were right, the cord was pulseless and fœtal heart could not be heard.

I question now the wisdom of inducing labor in these cases, the difficulty of selecting the proper time, the uncertainty of the operation, and then, if complications develop in labor the infant is weak and will not bear the trauma associated with the possible instrumental interference.

In another case I would allow the patient to go to term, feeling that I could better deal with what complications might develop. The necessity of watching carefully a gestation where ventro-fixation is apparent, as a threatened miscarriage might indicate an abdominal section to liberate the uterus. Later, the induction of premature labor may be indicated where the presenting part is displaced and there exists marked thickening of the anterior wall of uterus. At term, our patient's condition may be a grave one. The case should be studied carefully, and if we find the pelvic inlet obstructed and the ovoid in a faulty position, the latter should first be rectified, making, if possible, the cephalic extremity present. If the cervix does not dilate, or the presenting part does not advance, manual dilatation, or extensive cer-

vical incision may be performed, the labor then terminated with the forceps.

In exceptional cases this course will not suffice, and the Cæsarean section will have to be resorted to. The fallacy of allowing nature to take her course or to attempt the forceps operation without first dilating or incising the cervix, the first case reported illustrates. These remarks I hope will prompt a discussion, not of the various methods of ventro-fixation, but of the wisest methods of treating pregnancy and labor, should they be so complicated.

THE TREATMENT OF UTERINE RETROVERSION.*

By James N. West, M.D., New York.

This subject has been thoroughly written about and discussed, but the fact that men are constantly endeavoring to work out new methods and the variety of expedients already resorted to for the relief or cure of this condition demonstrates that the proper course to pursue is still *sub judica.*

Since I have been engaged in private practice I have had more patients to treat for retroversion than for any other disease, and consequently I have given it a great deal of thought and have attempted to arrive at some definite conclusions. Starting with an unbiased mind it has been my endeavor, having in view only the welfare of the patient, and not the advancement of any one operation or line of treatment to which I had allied myself, to cull out from the mass of accumulated experience that which is best. I shall not endeavor to go into the etiology of retroversion, but in its treatment we must constantly bear in mind its cause. I have spoken of it as a disease. In many cases it is a symptom of other underlying disease, but a symptom of such magnitude that the original cause is often permitted to be obscured and the one consulted for relief addresses himself only to the correction of the version. How futile would the effort be of one who, for instance, would attach the uterus to the anterior abdominal wall in a case coincident with gastro-ptosis, and displacement of the liver, where the retroversion was only a part of a general condition of displacement of the abdominal organs.

* Read before the Woman's Hospital Society January 18, 1898.

I shall but mention the cases where the retroversion is caused by the growth of intra-abdominal neoplasms, such, for instance, as where a fibroid or an ovarian cyst of large growth forces the uterus back.

The first idea which presents itself to the mind of one considering this subject is the great variety which is to be encountered, ranging from the small and flabby, partially prolapsed uterus, which will roll around in any direction, to the uterus which is fixed firmly backward in a mass of inflammatory exudate. When one considers this great range of pathological conditions, and also the important bearing which the patient's age, social condition, child-bearing and probable occupation must have, it becomes evident that each case must be made a separate study and must be treated according to the conditions found in it. In other words, no one absolute rule for treatment can possibly be applicable to all cases. I shall confine myself to the consideration of three lines of treatment in the order of what I conceive to be their importance. Other methods and devices are so numerous and worthless that it would be a waste of time to detail them. One of the most frequent forms of retroversion with which we meet is the uncomplicated variety, which follows subinvolution after labor or miscarriage, where relaxed ligaments favor the displacement and the weight of the organ and pressure of the intestines prevent its return to the normal position. Under the same head may be classed those cases where the displacement is due to a sudden strain or a fall, and which has remained so long displaced that the ligaments have become relaxed and the uterus heavy from impaired circulation. In these cases, where there has been no inflammation of the pelvic peritonæum or infiltration of the uterine ligaments, we may, by the work of a few minutes, give the patient complete and almost immediate relief from a train of most distressing symptoms which may have been undermining her health for years, through the application of a suitable pessary. The fitting of pessaries has been so ably discussed and the principles which underlie their successful application so thoroughly studied and explained by Dr. T. A. Emmet that I need make but slight mention of it here, referring those who desire to look into the subject to his works. It matters not how much theoretical knowledge one may gain on this subject, success can only come with practice, with a thorough cultivation of the sense of touch and a familiarity with the anatomy and conditions of the pelvis which can only come to the specialist. As a rule, the general practitioner should not attempt to fit a pessary, but as soon as he ascertains that his patient has a retroversion he should send her to a specialist—not only to a specialist, but to one who gives

especial care to that line of work, for I believe that to many who practice gynæcology to-day the fitting of a pessary is almost a lost art.

I most frequently use Dr. Emmet's modification of Hodge's pessary, as I have found that from its shape and the gradation in size, it requires less alteration than any of the others which I have tried.

I usually gain at first a moderately accurate idea of the length of the instrument to be used by passing a blunt instrument up to the vaginal vault back of the cervix, the uterus being in position, marking upon the instrument with the thumb the distance from the top of the vaginal vault to a point just back of the pubes. Then I gain an idea of its width by sweeping the finger slowly around the vagina, then note the shape of the pubic arch, which varies greatly, and also the curve of the anterior vaginal wall. In this way I can fairly estimate the size and shape of the instrument to be used, and often find that I can give a satisfactory fit at the first trial. Occasionally, however, many alterations are necessary, the necessity for which can only be determined by the patient having worn the instrument for a time. Having been once properly fitted, the pessary should be removed, scoured and replaced at least once a month. The necessity for this cannot be too strongly impressed upon the patient. I saw a case where the pessary had not been removed for years. It had cut through the vaginal vault almost into the peritonæal cavity, the vaginal mucous membrane had grown firmly over it, and quite an operation was required for its removal.

It may be necessary to alter the original instrument or fit a new one from time to time, because, as the uterus becomes smaller from improved pelvic circulation, the vagina partakes of the involution, so that an instrument which may have been perfectly satisfactory for months may be found eventually to be cutting into the vaginal vault. One should not allow a patient to depart to any great distance immediately after the instrument has been applied, because a few days will be necessary to determine whether or not it will be satisfactory.

The above remarks presuppose that the uterus can be replaced, that there are no adhesions and no inflammatory tenderness. Unfortunately, a large proportion of cases do not present this satisfactory condition, but exactly the opposite is seen. The uterus is held back by adhesions, there is tenderness and infiltration of the ligaments, the cervix and posterior vaginal wall may be lacerated. Acute inflammatory symptoms must be relieved by hot douches, rest in bed, if necessary with the foot of the bed elevated, applications of tincture of

iodine and boroglycerine tampons. This having been accomplished, the injuries must be repaired. I think this is advisable before beginning the regular course of treatment for retroversion, because repair of the cervix promotes involution of the uterus and absorption of bands, and repair of the posterior wall aids in restoring the general pelvic circulation and also aids mechanically in the treatment which is to follow.

Even though the uterus be held back by moderately strong adhesions or thickened ligaments, it can usually be restored to its proper position by a faithful and intelligent course of treatment, consisting of packing with tampons made of lamb's wool. There are but few cases which will not yield most satisfactory results from this method, and it has the inestimable advantage of leaving those cases in better condition for operative procedure than they were in the beginning. The nature of the material used for packing is of vital importance to success. Cotton is useless, because of its quick loss of resilience from absorption of secretions. Lamb's wool is an ideal material, but is exceedingly irritating to the mucous membrane of the vagina. However, we have a ready means of overcoming this by smearing the tampon over with vaseline and sprinkling upon it a little boric acid. The tampon should not be soaked with vaseline, for this would destroy its resiliency. A convenient size for most cases is a moderately firm roll about two and one-quarter inches long by one and one-quarter in diameter.

The best position in which to begin the treatment, provided the patient is sufficiently strong, is that of the knees and chest, for as soon as the speculum is introduced we have the aid of gravity and the pressure of air in the vagina. Withdrawing the speculum, I insert the index finger and press gently but firmly against the fundus until I can feel it to have yielded slightly. It is well occasionally to draw the cervix toward the ostium vaginæ at the same time that the fundus is being pressed forward. Now reintroduce the speculum and place a tampon against the body of the uterus at the top of the vagina, the axis of the tampon being at right angles with that of the vagina. This can be smoothly plastered against the vaginal vault and a second one placed upon it, and a third slightly to the front of the cervix, all plastered in smoothly. This will be sufficient for the first treatment.. In removing the speculum, keep one or two fingers on the tampons, to prevent their displacement.

The tampons should be removed at least every other day and immediately replaced, first mopping out the vagina with a mild antiseptic.

They should be removed during the periods. As the case advances the tampons may be gradually increased in number until the fundus is really supported upon a non-irritating resilient column resting upon the rassis of the pubes and the muscles which close the ostium vaginæ. You will now have the satisfaction of finding your patient becoming daily more comfortable, and thus being relieved, relying completely upon your skill and becoming more confident in the outcome of her case.

Occasionally, notwithstanding all precautions, a vagina becomes irritated. It is then necessary to cease treatment for a few days, allowing copious douches of warm water containing a little boric acid and alum.

After a certain amount of progress has been reached, we find that the uterus may be raised past the dead point—that is, to a point where intestines, instead of pressing upon the front and holding it back, may get behind and help to press it forward. Then the method of packing should be slightly altered. The patient may take the dorsal position, as for an examination. Now, getting the uterus as well up as possible, the cervix is pushed gently back with the index finger of the left hand and a tampon placed in front of it, the ends being tucked up on each side of the cervix so as to enclose it in a kind of sling, the tampon presenting a convexity downward. One is superimposed upon another in the same manner until the last one rests against the pubic arch, thus making a column to carry and hold the cervix back, just as the first described lifted the fundus forward. When the point is reached where the uterus may be easily kept in place by two or three tampons placed in front of the cervix the patient is ready for a pessary, and this satisfactorily fitted she is symptomatically and physiologically cured; but, unfortunately, she is not anatomically cured, for she must in most cases continue to use the pessary and to be under occasional observation.

Dr. Mundé, in a paper read before the American Gynæcological Society in 1895, give his experience as having observed 5.5 per cent as cured, and quotes the statistics of Davenport, who found that in five hundred and eighty four cases treated by Mundé, Löhlein, Fränkel and himself, fifty-two were cured, being 11 per cent.

I have not been so fortunate as these gentlemen, as no case has yet come under my observation where the pessary could be discontinued.

In two of my cases where a course of packing had been resorted to before the pessary could be used, one lasting six months and the other two years, both were finally rendered perfectly comfortable, and after

wearing the pessaries a few months became pregnant and bore healthy children, one having been married and sterile for eight years. I expected that in each of these cases the relaxed uterine supports would take part in the involution following delivery so as to support the uterus and permit the discontinuance of the mechanical supports, but in both cases I was disappointed. One was so persistent in its backward tendency, that I had finally to resort to packing for a short time before a pessary would keep it in position. I have taken the liberty of giving the details of my experience of a method already made known to the profession by Dr. Emmet and others. I feel justified in doing so by the fact that the tendency of the profession seems toward radical operations of the most empirical nature, and they seem to forget the great and beneficent results of the line of treatment which I have described. Some who have tried it and admit the good results obtained offer the objection that such a course of treatment is too long. There might be circumstances under which such an objection would be valid, but in the great majority of cases it is not so. If the question is laid honestly before the patients, the majority of them will prefer to have the chance for relief by treatment, rather than to submit to operation. The same objection was at first offered to the long course of treatment necessary in hip joint disease, which extends over a period of two to ten years, but the splendid results obtained have justified the long course of treatment. I think that the restless and radical gynæcologist might learn a good lesson from the orthœpædic surgeons.

I would be delighted if I could be convinced that all of these cases could but be relieved by operation, because the matter would be much simplified. The method which I have advocated is not ideal, as I have demonstrated, in but few cases, where the results are best, are they perfect, and there is a small proportion of cases where the adhesions are of such a nature as not to yield to treatment, after a faithful trial of which we may have finally to resort to operation; but, as I have before stated, our patient has now a much better chance for relief by operation. The shortened ligaments have been stretched and the uterus reduced in size by the packing.

If we have tried treatment a few months and find no improvement we may resort to ventral fixation. The cause of failure is usually the presence of a firm fibrous band of adhesion or the displacement and adherence of the tubes and ovaries. These conditions may be undoubtedly better seen and relieved by opening the abdomen and having the whole pelvis directly under inspection, and the abdomen being

opened we may do ventral fixation or intra-abdominal shortening of the round ligaments. I prefer the former.

The technique of this operation is of the utmost importance to its success. The incision should be made as far down toward the pubes as practicable without cutting the bladder and not longer than three or three and a half inches. This just about allows room for inspection of the pelvis and entrance of the hand. Free from all adhesions, tying off when necessary, and bring the uterus forward until the fundus passes as nearly as possible into the normal position, holding it there with small volsellum forceps. Be careful not to push the uterus too far forward when introducing the sutures, else the posterior wall will be attached instead of the top of the fundus. Having decided upon the point of attachment, which should be at the lowest point possible, pass the suture of silkworm gut with a half curved round-pointed needle through all the layers of the abdominal wall down to the peritonæum, leaving it out then through the top of the uterus transversely about half an inch and one-quarter of an inch deep. Bring the suture out through the opposite wall in a manner analogous to that in which it was inserted. Now carry a suture through all the layers of the abdomen down to the peritonæum and out through the opposite side, not including the uterus. This suture brings the abdominal wound together closely over the point of attachment of the uterus. Insert a third suture after the same manner of the first. All three of these having avoided the peritonæum, the fundus will have been brought in contact with an area of bare peritonæum, insuring a firm attachment. The other sutures should be inserted after the usual manner for closing an abdominal wound. Leave the uterine sutures long, so as to distinguish them from the others, which may be removed in eight days. I am in the habit of leaving the uterine sutures four or five days longer. I have done ventral fixation eight times without a death and with fair results as to the relief. There was so little reaction or disturbance in any of the cases that one could hardly credit the fact that a laparotomy had been done. All but one had been subjected to a faithful course of treatment. That one had adhesions of such a nature as to suggest failure from the first. One was particularly satisfactory in its result. Her treatment had lasted for about two years. She had refused to have any operation, and was finally informed that treatment could be of no further benefit to her and a continuance of it would be useless. I lost sight of her for four months, when she returned and asked that an operation be performed. On opening the abdomen a firm, broad fibrous band about

half an inch long united the middle of the body of the uterus to the rectum. The bottom of the cul-de-sac was free, allowing the free passage of the finger under the adhesion. It was so firm that it had to be cut with scissors. Before severing it I had an opportunity to observe the action of drawing the uterus forward. This would simply pull the rectum forward, and when the force was relaxed the uterus would spring back as though drawn by india-rubber. The relief from a most distressing train of symptoms began immediately upon the subsidence of the acute effects of the operation. The patient came voluntarily a few days ago to tell me how well she had been since.

All the others have done well but one. She should have had her tubes and ovaries removed. One has been operated upon too recently to know what the result may be. These cases represent the bad ones culled from a large number who have been treated.

The modification of this operation suggested by Dr. Howard Kelly is theoretically bad. The effect of having a firm adhesion between the back of the uterus and the abdominal wall must be disastrous to cases which become pregnant, for it is evident that as the uterus grows it must be crowded down against the bladder, and the adhesion which holds the uterus must give way or abortion occur. This is not only theoretically true, but is proving so practically.

The most frequent error in performing the operation is that of attaching the uterus too high. Where this is done and the adhesion becomes firm and strong, the patient will probably suffer more from it than she did from the retroversion, and it may be necessary to operate and let the uterus down. In case it is not so firm, the probability is that the patient will be relieved by having the adhesion break and let the uterus down.

The Alexander's Operation.—I wish that I could feel as some gentlemen do in regard to the beneficent effects of this operation, but my observation of the patients upon whom it has been done does not bear out the claims made for it. It may have a limited field, but, like the ventral fixation, it is very empirical. It is certainly not applicable to cases where there are adhesions, nor where there are diseased tubes and ovaries. If the uterus is perfectly movable, can be easily replaced and the surgeon fortunate enough to draw the ligaments out just far enough, he may have a good result, but such cases would probably be more comfortable with a pessary. In case, however, such a patient were going away where the pessaary could not be looked after, or in case she refused to wear one, we might be compelled to resort to Alexander's operation. I have no reason to oppose this operation except

that of my judgment. I have had four cases recently under observation in which it had been done, and have noted the following conditions:

Mrs. W., double inguinal hernia, complete retroversion.

Mrs. P., inguinal hernia on one side, sense of dragging in the other inguinal region; is now almost a chronic invalid; before operation she could work about the house pretty comfortably.

Mrs. R., fundus of the uterus drawn forward, but cervix pointing back in what was probably direction of the retroversion before the operation. This case I treated for nearly a year, during which time she was greatly relieved from pain in the back and a sense of dragging in the inguinal regions. She has been finally almost entirely relieved by the use of a pessary, which takes up the slack in the vagina and carries the cervix back so as to bring it more nearly into line with the body.

Mrs. G., the retroversion returned completely.

I know that many cases whom I have seen who appeared to have been anatomically cured have felt a sense of dragging and aching in in the inguinal regions.

It is a well-known fact that there is a tendency to hernia in pregnant women, and this operation must certainly weaken the abdominal wall, especially where, as is often the case, the pillars of the ring are almost destroyed in the search for the ligaments. I believe that some even advocate laying the entire inguinal canal open in order to get at the ligaments. This operation was presented to the profession years ago, ably performed, ably advocated, thoroughly discussed, and finally relegated to oblivion, from which it has recently been resurrected. It is doomed to fall into a minor place among the procedures for the relief of retroversion, because there are better methods.

THE PUERPERIUM COMPLICATED BY TYPHOID FEVER.*

By Wm. E. Parke, M.D., Philadelphia.

Whenever fever follows the delivery of a woman, our first thought is that the patient has been infected, and in the absence of tangible evidence of some other condition which might give rise to elevation of temperature, our treatment should be directed to the disinfection of the birth canal. Text books enumerate many other causes besides sepsis which give rise to fever during the puerperium. Among these *constipation* is reckoned as a very common cause. *Emotion*, such as fright, anxiety and the like will occasion a sudden rise of temperature. *Exposure to cold* and *reflex irritation* are classed as causes of fever by some authors. The rise of temperature which accompanies engorgement of the breasts has been thought to be of a reflex character.

The puerperal state does not afford immunity from any of the febrile diseases to which the non-puerperal patient is liable, but there are certain diseases that are clinically of more importance than others, on account of their frequent occurrence, or lack of distinctive signs during the early stages of the disease. Among these *malaria* holds an important place and has doubtless been the cloak for many a case of sepsis. Indeed, it is widely believed that the lying-in woman is especially susceptible to the malarial poison. The *exanthemata*, *pneumonia* and *rheumatism* (arthritis) occurring in the lying-in woman present other symptoms in addition to the fever which serve to differentiate them from sepsis, although it is recognized that the latter two diseases may be septic in origin, and that sepsis is sometimes attended with a skin eruption. For some years back the journals have contained numerous reports of influenza complicating the puerperium. This disease is of such protean form and at times so indefinite in character that to make an early differential diagnosis is very difficult or impossible.

The symptoms of typhoid fever during the first week bear a singular resemblance to those of sapræmia or septicæmia. These are rigor or chilly feeling, languor, headache, pains in the back and legs, loss of appetite, nausea, fever, increased pulse rate, etc. Taking up singly the symptoms of typhoid fever during the first week, it will be seen

* Read before the Philadelphia Obstetrical Society, February 3, 1898.

how impossible it is to differentiate them from those of infection in the puerperal patient. *Fever* is the chief symptom to which our attention is directed, and about this many of the others center. As in typhoid, this may begin with a chill or creepy feeling, and rises from day to day, with morning remissions, so it does in the mild infection. *Meteorism*, or *tympany*, is seen alike in typhoid fever and pelvic inflammation due to infection. The *skin* in both affections has a pallid appearance and a moist feel during the remission. At times the sweats are marked. The languor, headache, general aching of the whole body, increased pulse rate, scanty high-colored urine and loss of appetite are the accompaniments of fever and have no special diagnostic signficance. Even *diarrhœa*, which is usual in typhoid, may be also septic in origin. In short, the intoxication due to the absorption of toxins, whether they be from the typhoid bacillus or from wound infection, present no distinguishing features.

During the past year two cases of typhoid fever, during the puerperium, have come under my notice. One occurred in a woman in the out-patient department of the Lying-In Charity. I saw this patient only twice—first at the delivery, and again about five days later, when I was summoned by the student in whose charge she was, on account of fever. The nature of the disease was recognized at this time. I do not have the notes of this case. The second case occurred in my own practice, and the details of it are as follows:

Mrs. ——— was delivered in the evening of April 22, 1897, and a post-partum bichloride douche given, on account of a muco-purulent discharge which had been present during gestation. The injury to the perinæum was so trifling that no stitches were introduced. On the fourth day the patient had a slight chilly feeling, followed by a sweat. In the evening of the fifth day the temperature was 99 3-5°. The lochia were not offensive; there was no pain or soreness about the abdomen. On the eighth day the morning temperature was above 99° and the evening temperature above 100° (fractions of a degree not noted). The discharge was scanty, but not offensive. She had headache; the tongue was moist and fairly clean; the appetite good and bowels moved daily. It was thought on account of the temperature remaining about 100° that the patient was a trifle septic, and on the following day—the ninth—the uterus was washed out with a 1-2000 bichloride solution and a 25 gr. iodoform suppository inserted. On the tenth day the temperature in the morning was 101°, and on the eleventh day 102°, and in the afternoon of the same day 104°. The breasts were in good condition. There was no tenderness or bloating

about the abdomen, tongue moist and slightly coated, appetite fair and bowels a trifle costive. This patient had a syphilitic history, as well as a leucorrhœal discharge, and it was still suspected that her elevation of temperature was due to a late infection. At this time—the thirteenth day—she was given ether and I curetted a large flabby uterus, obtaining only a small amount of débris, which was perfectly inodorous. The uterus was packed with gauze dusted with iodoform and boric acid powder. On the following day—the fourteenth—the temperature remained the same. Neither medicine, douche nor curettte seemed to have the slightest influence on the temperature. At this time she was taking strychnine, ergot and quinine—of the latter 21 gr. a day. On the fourteenth day she was given some calomel. On the seventeenth day I have noted that there was some hebetude, which was charged to the quinine, meteorism and a stool, secured by medicine and emema, was yellow in color and offensive; two rose-colored spots appeared on the abdomen, and on the following day many spots made their appearance and enlargement of the spleen was recognized. At this juncture a drop of blood was sent to the laboratory for examination, and a report of typhoid fever returned. The patient continued through a typical course of typhoid fever of more than average severity, the temperature reaching normal on the thirty-fifth day after confinement, or about four weeks after the onset of the disease. The bowels remained costive throughout.

The points in this case which militate against the diagnosis of septic infection are the late appearance of the fever, the absolutely negative result of the intra-uterine douche and curettement and the failure to obtain any detritus from the uterus. A blood examination at a little earlier period might have revealed the nature of the case.

The importance of making an early diagnosis in cases of sepsis cannot be overestimated, as upon this the treatment depends. If the cleansing and disinfection of the birth canal be delayed, irreparable damage may be done. In all doubtful cases, therefore, where fever is present, I consider it imperative to give an intra-uterine antiseptic douche, and, if need be, to curette.

THE EASTMAN METHOD FOR VAGINAL HYSTERECTOMY.

By Thomas B. Eastman, A.B., M.D., Indianapolis, Ind.

Professor of Anatomy and Clinical Gynæcology, Central College of Physicians and Surgeons; Gynæcologist to the Central Free Dispensary, City Dispensary and City Hospital.

While the method for vaginal hysterectomy, as devised and followed for ten years by Prof. Joseph Eastman, was described as long ago as 1890, its advantages over many other methods of procedure appeal so strongly to those who practice it that pardon may be craved for here rehearsing its details and emphasizing its advantages.

The anæsthetized patient is placed in the true Sim's position, which secures to a not limited degree the advantages of the Trendelenburg posture, in that it allows the bladder, greater omentum, coils of the ileum, the colon with elongated mesentery, to fall away from and not into the field of operation. To secure the greatest possible freedom of manipulation the anal sphincter is next dilated by a nurse, which procedure causes a temporary semi-obliteration of the perinæum. Fully an inch is thus gained. A modified short Sim's speculum is used.

The anterior lip of the cervix is seized with a tenaculum and pushed upward and backward and not drawn downward to obstruct the ostium vaginæ. With another tenaculum tension is made on the vaginal mucous membrane at its point of union with the cervix. With a single motion of the scissors the mucous membrane is incised. The points of the scissors are next plunged into the connective tissue and opened. The finger then feeling the peritonæum gliding over the uterus, serves as a guide in plunging through the peritonæum (drawn down with a tenaculum) a pair of scissors sharp enough to perforate the resisting peritonæum, but not sharp enough to wound the receding intestine. The scissors are again opened sufficiently to extend the wound right and left to the base of the broad ligaments. That it may not lead to a false passage, the bladder serosa is now stitched to the vaginal mucous membrane, at the outer angles of the incision.

An incision of similar nature is next made posteriorly, the serosa of the cul-de-sac beng stitched to the posterior vaginal wall. The next step consists of the passage of the ligature-carrying hook needle, which, introduced into the abdominal cavity from the anterior incision,

* Read before Chicago Gynæcological Society, February 18, 1898.

is "hooked" over the broad ligament, the "eye end" with the ligature appearing in the posterior incision. The needle is withdrawn and the mucous membrane betwen the ends of the anterior and posterior incision incised. The "bull dog" ligature is now tied, thus constricting the broad ligament into a rounded mass. This is repeated on the other side. The grooved staff is now passed over the broad ligament,

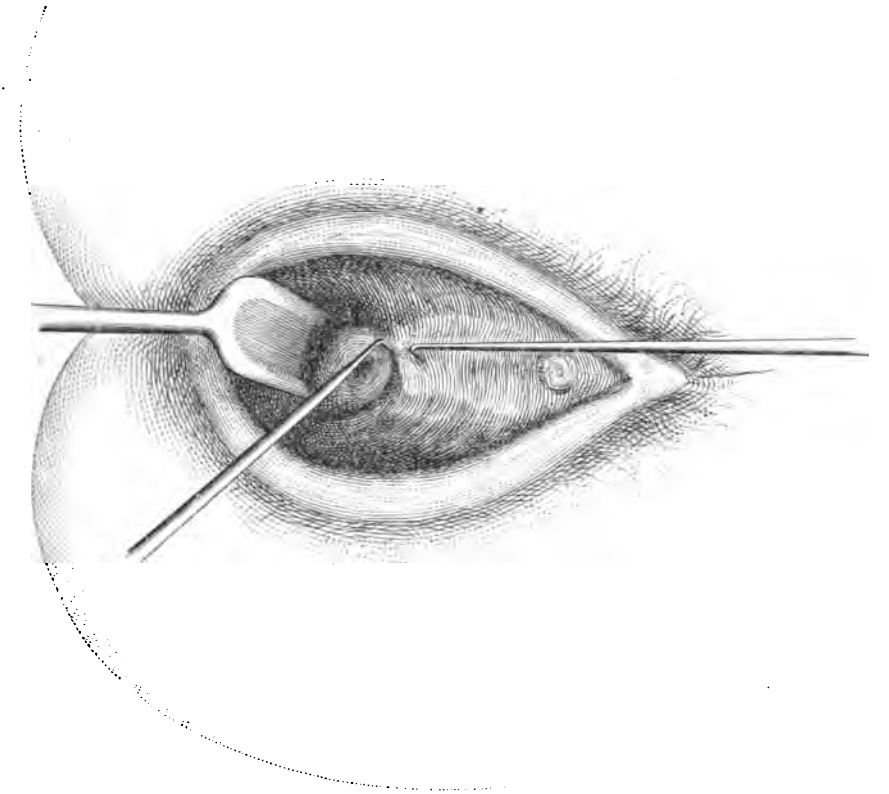


Fig. 1. The anterior lip of the cervix is seized with a tenaculum and pushed upward and backward, *not* drawn downward.

entering at the anterior incision, emerging at the posterior incision, dragging down the broad ligament, not the uterus, into plain view. A curved needle is now placed on the "bull dog" ligature and three or four transfixing stitches suffice to reinforce the first ligature. The needle is passed along the outer groove, the cutting is done in the inner groove. A little experience with this method enables the operator to pass the ligature and staff in such a way as to include ovary and

tube. If this is not done they may be easily included later on within the ligature first passed by means of the hooked needle.

The uterus and its appendages removed, we have remaining in the vault of the vagina a transverse slit, at either end of which there protrudes a pedicle, rounded, well-defined, and, with the exception of a

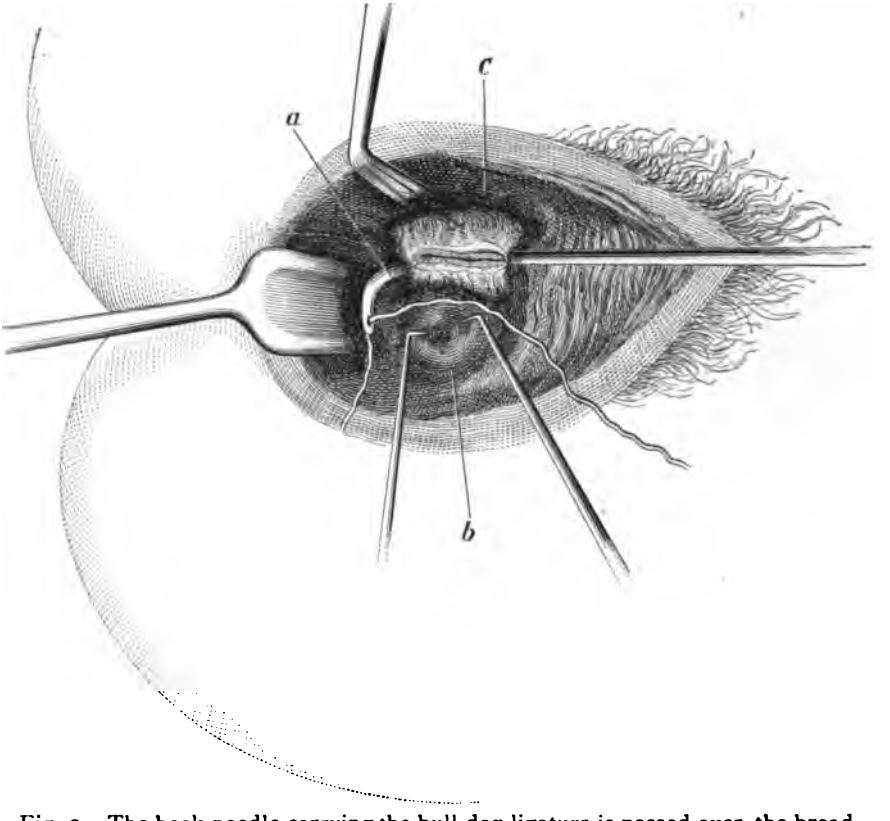


Fig. 2. The hook needle carrying the bull-dog ligature is passed over the broad ligament and withdrawn. a. Hooked needle to carry bull-dog ligature around broad ligament; b. Os uteri; c. Broad ligament incised to receive bull-dog ligature.

small portion, covered with peritonæum throughout. The vesical peritonæum anteriorly, the rectal peritonæum posteriorly are easily in apposition with the peritonæum of these pedicles. A catgut ligature passed through the vesical peritonæum, through internal circumference of the pedicle, through rectal peritonæum, tied, affords approximation of the serous surfaces, and places the raw surface of the pedicle completely, perfectly extra-peritonæal. Two

or three catgut sutures draw vesical and rectal serosæ together, leaving room for a small rubber drainage tube to be removed in twelve hours. No attempt is made to unite mucous membrane, when we have been dealing with the infecting tissues in the pelvis; otherwise the suture may include mucous membrane.

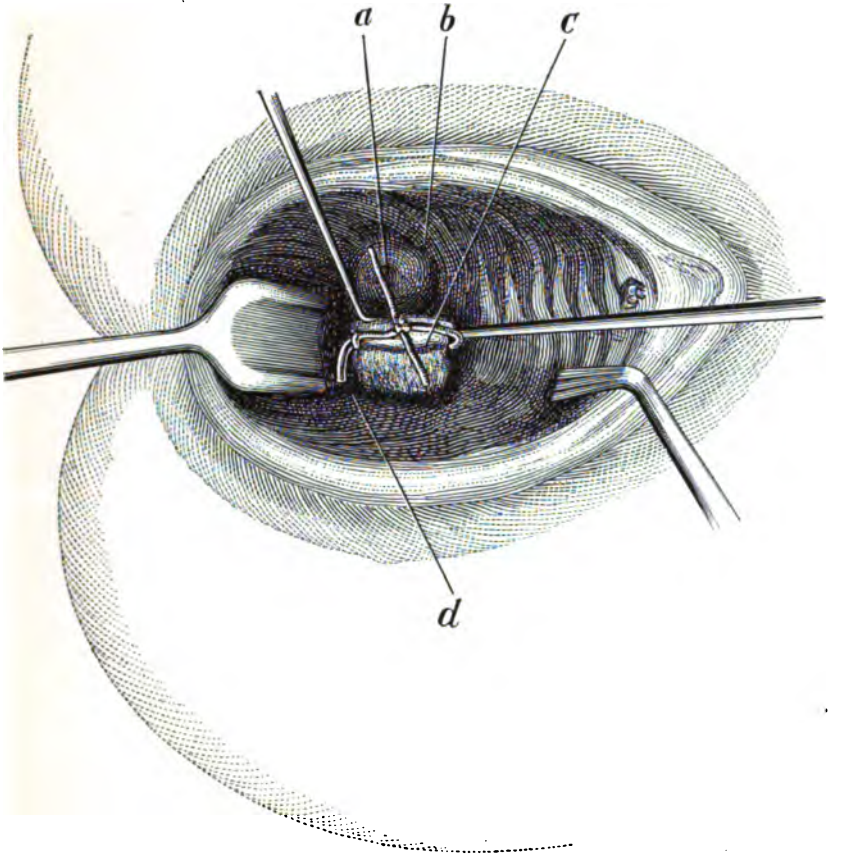


Fig. 3. The bull-dog ligature is tied and the grooved staff passed over the ligament. A few transfixing stitches serve to re-inforce the bull-dog ligature. a. Os uteri; b. Heavy or bull-dog ligature constricting broad ligament to round mass; c. Broad ligament with mucous membrane incised to receive ligature; d. Staff holding down broad ligament.

As seen by its followers, the advantages of the methods may be recapitulated as follows:

The Sim's Position.—Beginners in vaginal hysterectomy and some whose advent into this field is not of such recent date, display a wonderful penchant for "getting into" the bladder. A modicum of skill

will avoid this accident, as the bladder falls away from the seat of the operation. The same may be said in regard to intestines, omentum, etc.

Dilatation of the Rectum.—This step is an important one. The vagina, none too large at best, is materially increased in size. Operations on virgins, otherwise well-nigh impossible, are rendered comparatively easy of accomplishment.

The cervix and uterus are pushed upward and backward, not drawn downward.

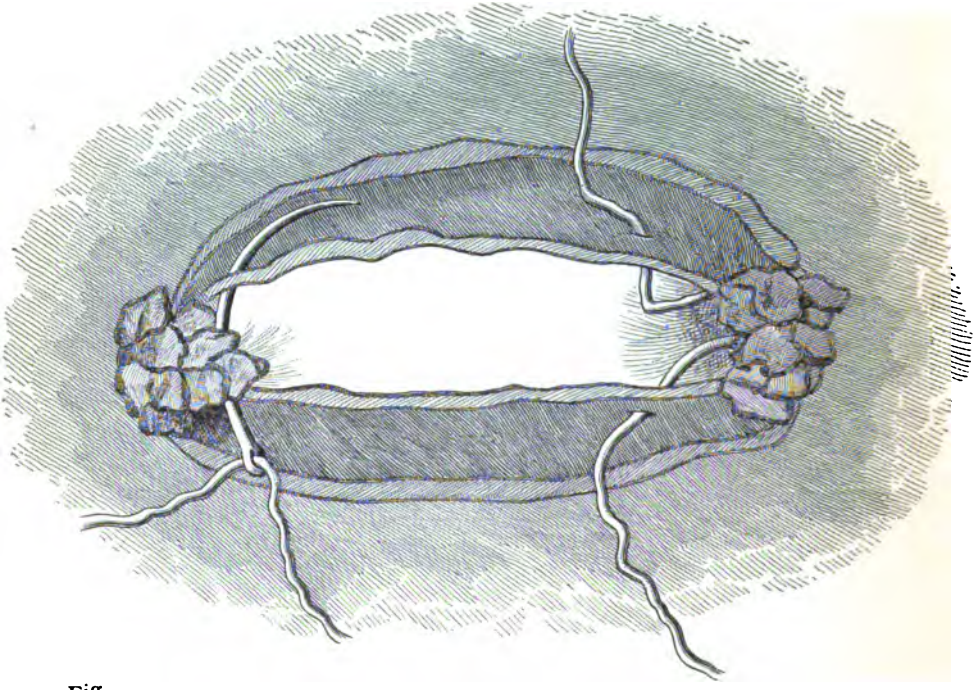


Fig. 4. A catgut ligature passed through vesical peritonæum, through internal circumference of pedicle, through rectal peritonæum and tied. This affords sero-serous approximation.

In the description of most other methods of vaginal hysterectomy the operator is directed to draw the cervix well down and out the vulva. Fear of severance of ureters is a cause of much anxiety in these operations. Garrigues says, speaking of the ureters, "They lie behind the peritonæum imbedded in very loose connective tissue. * * * They cross the lower end of the common iliac artery or the upper end of one of its two branches, the external or internal iliac, and

enter the pelvis. Here they describe a large curve.* First they diverge, running downward and backward and a little outward on the wall of the pelvis to a point near the spine of the ischium. Then they bend downward and forward and considerably inward so as to converge toward the bladder."

If anyone will place before himself a mental picture of the anatomy involved, it at once becomes evident that this "dragging down and out" of the cervix can only tend to convert this curve of the ureter into a straight line, which has the effect of causing the fundus, with its greater transverse diameter, to occupy the space normally occupied by the cervix, thereby very much diminishing the space between uterus and ureter and increasing the danger of the latter being severed.

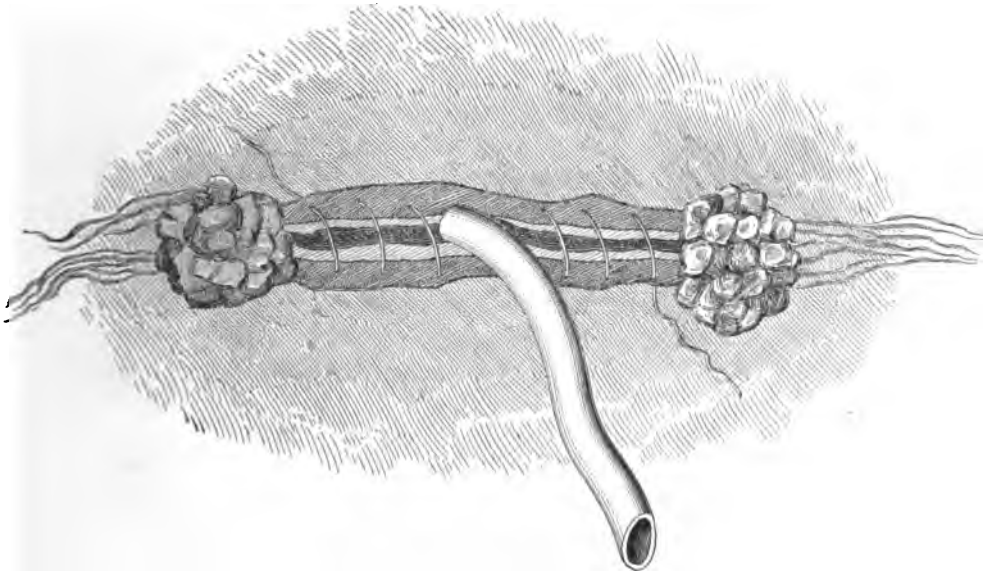


Fig. 5. Two or three catgut sutures draw vesical and rectal serosæ together, leaving room for a small rubber drainage tube to be removed in twelve hours.

On the other hand, if the uterus is pushed upward and backward, the point of incision is removed as far as possible from the region of the ureters, the curve being increased, the cervix drawn backward and away. Again, in igni extirpation, we may remove a uterus, going wide of the cervix so ulcerated that it has no tissue in which a tenaculum would hold.

* German anatomists (Pick) claim that they turn at a comparatively sharp angle.

The Hook Needle and Grooved Staff.—The hook needle enables the operator accurately to constrict the broad ligament into a round mass without fear that he has included intestine or omentum in the ligature which surrounds the superior border of the broad ligament.

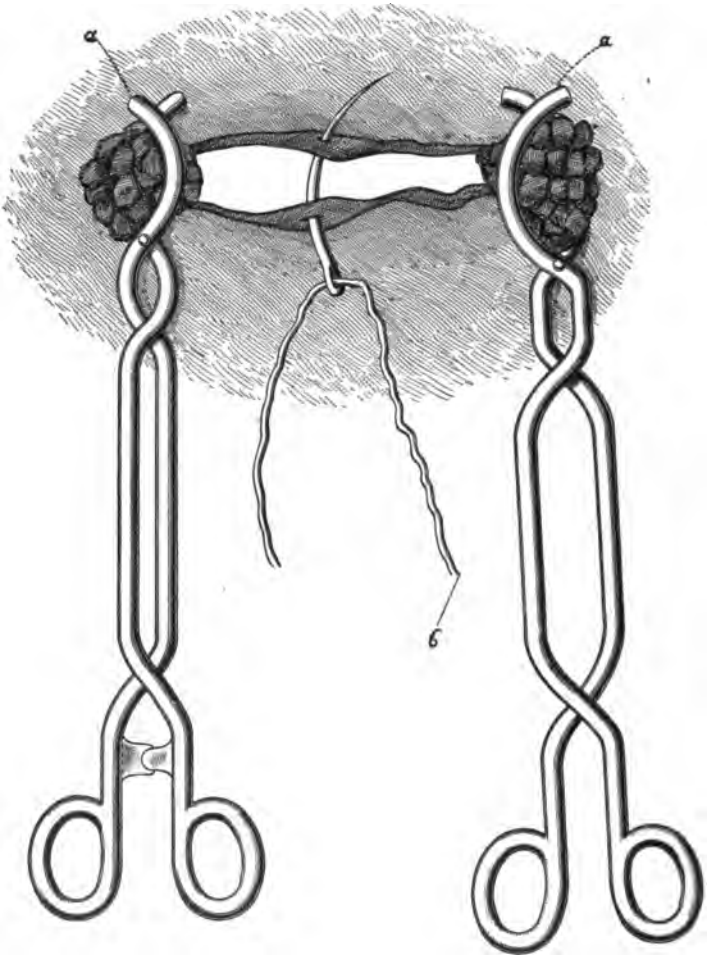
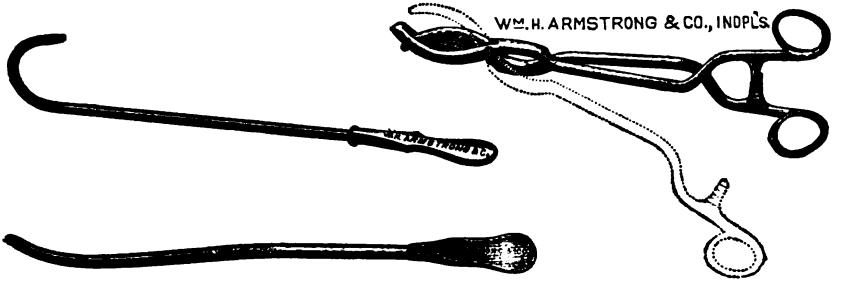


Fig. 6. Igni-extirpation can be done with these forceps, burning off buttons on forceps. a. Horns of forceps resting in posterior vaginal cul-de-sac; b. Needle seizing serosæ to unite wound.

The grooved staff pulls down the broad ligament into a position in plain view and obviates the necessity of the repeated introduction of the finger into the abdominal cavity. It affords a groove along which

the needle is to be passed, a groove along which the uterus is to be separted from the ligament. If it be particularly desirable go wide of malignant disease, in igni extirpation, the Eastman broad ligament forceps may be applied well out toward the wall of the pelvis and yet not render impossible of accomplishment that much to be desired end in vaginal hysterectomy,

Definite Closure of the Wound.—A glance at the illustration will serve to show what is meant by closure of the wound. The wound is not stuffed with gauze, although it is conceded that where broad pedicles, rendered necrotic by long pressure of forceps, are left to slough off, it is quite necessary that gauze be employed to prevent contact of the necrotic mass with intestines. And right here is emphasized the fact that this method enables one to fix the stump extra-peritonæal. If the operation is skillfully done the wound can be closed with the accurate approximation of an abdominal wound, and yet those who stuff



a vaginal wound for drainage ridicule the idea of drainage in abdominal surgery, which, if needed at all, is needed more than in vaginal hysterectomy. It is far more important that this lower wound should be closed to prevent prolapsus of intestines and possibility of contact of necrotic pedicles with viscera. A small drainage tube is used. It is removed at the end of twelve hours; eight hours after its removal the pelvis is as thoroughly lined with peritonæum as before the operation. The pedicles thus fastened in the angles fill a twofold office—first, in a measure replacing the keystone of the pelvic arch, lessening possibility of prolapse of pelvic viscera, and second,

Prevent Cystocele and Rectocele.—Where the vagina has been drawn upward as much as possible by suture, it has been found in most cases by examination a year later that the vagina is drawn upward, with a depression on each side where the broad ligament has retracted. Where compelled to leave the pelvic wound open, packed with gauze,

a year or so later a shortened vagina, cystocele and rectocele have been found.

Thus by this method all the pelvic organs are on a traction upward, the whole procedure being diametrically opposite to the French method, which turns the vagina nearly wrong side out, shortens it one-third its length and then holds up the intestines with gauze instead of closing the wound, thus paving the way for cystocele and rectocele.

CONSERVATIVE SURGICAL TREATMENT OF UTERINE FIBROIDS.

By Wilmer Krusen, M.D., Philadelphia.

Instructor in Gynæcology, Clinical Assistant in Gynæcology at Jefferson Medical College; Assistant Gynæcologist and Chief of Dispensary for Diseases of Women, St. Joseph's Hospital; Gynæcologist to Charity Hospital.

A most distinguished abdominal surgeon has written "that in no abdominal operation is there a greater variety of method than in this for the removal of uterine myoma. At least twenty different methods are described by as many surgeons, and permutations and combinations of these are put forward with a freedom that is truly bewildering." The following cases illustrate the value of abdominal myomectomy, as suggested by A. Martin, of Berlin, and indicate the feasibility of this method in multiple interstitial and submucous growths, as well as in the pedunculated and subserous varieties. It is an operation which is the fruit of past experience and the seed of future advance in conservative work on the internal generative organs.

The writer is indebted to Drs. Montgomery and Fisher for their kind permission to use their cases in point in conjunction with his own.

Case I.—Mrs. G., aged 31, patient of Dr. John M. Fisher. She had the characteristic symptoms of fibroid tumors of the uterus. In September, 1895, an abdominal section was performed and enucleation of eight fibro-myomata varying in size from a medium-sized orange to that of an ordinary marble, the larger ones involving almost the entire thickness of the uterine wall. All the growths were removed through three surface incisions, which were closed by superimposed catgut sutures. The presence of a number of nodules indicated the existence of still smaller tumors, but these were allowed to remain. Both ovaries

* Read before the Philadelphia Obstetrical Society, February 3, 1898.

were partially cystic and were, therefore, resected, leaving the healthy structure. The patient made uninterrupted recovery. Menstruation was re-established seven weeks after leaving the hospital and has recurred at regular intervals ever since, continues three to five days, painless. A recent examination showed that the uterus occupied the normal forward position, was freely movable, and normal in size, form and density, with an entire absence of nodular formations. The patient is now in excellent general health.

Case II.—Mrs. H., aged 35 years and referred to writer by Dr. D. Braden Kyle. Patient had been married thirteen years and had had five miscarriages after from three and one-half to four and a half months' gestation. Menstruation regular, lasting three days; very painful. Operation on November 4, 1896, at St. Joseph's Hospital. Uterus retroverted with an interstitial fibroid in the fundus the size of a walnut, the appendages healthy. The fibroid was enucleated and the uterus fastened to the anterior abdominal wall. Convalescence uneventful.

Case III.—Mrs. D., aged 40. Referred to the writer by Dr. J. Chalmers DaCosta. Patient had been married thirteen years, never pregnant, complained of constant pain in lumbar region, leucorrhœa, etc. The uterus was found retrodisplaced and adherent. Operation May 4, 1897. Dilatation and curettement of uterus, enucleation of two small fibroid tumors from the anterior wall of the uterus and ventrosuspension performed. Recovery uneventful.

Case IV.—Miss W., aged 40 years, had suffered for seven years from fibroid growths. Operation by Dr. Montgomery at St. Joseph's Hospital, October 25, 1897. Abdomen opened, uterus drawn upward and the surface incised; thirteen growths varying in size from a pea to a walnut were enucleated. Five of these were of the submucous variety, and necessitated opening directly into the uterine cavity. Four incisions were made to permit removal of growths, the deeper ones extending into the uterine mucous membrane; these were closed with a double row of catgut sutures, bringing the muscular structures and then the peritonæum into accurate apposition.

Case V.—Miss A., aged 36. Operation by Dr. Montgomery on October 29, 1897. On opening the abdomen a large fibroid growth was found to arise from a pedicle from the fundus of the uterus, and that organ to contain eight other smaller growths. The pedicle of the mass was cut into and with a blunt dissector the tumor peeled out, the bleeding points were secured with hemostats and the other growths enucleated in a similar manner. The uterine walls were sutured with

catgut, controlling the hemorrhage and bringing the peritonæal covering in apposition. Irrigation of abdominal cavity with normal saline solution and a large quantity left in the peritonæal cavity. Abdomen closed with figure-of-eight silkworm-gut suture. Recovery uneventful.

Case VI.—Mrs. M. V., aged 35 years. Operation by the writer at St. Joseph's Hospital, November 10, 1897. The patient had suffered from the usual pressure symptoms and menstrual disturbances of uterine fibroids, and was also constantly annoyed by a most severe reflex cough, which had resisted all previous treatment, but which was relieved by the operation. An abdominal section was made with the enucleation of six subserous and interstitial fibroids through five incisions into the uterine structure; the incisions were closed with fine catgut sutures. The right appendage wes resected. As the uterus had been firmly adherent in the pelvis, it was held forward by passing one suture through the lower angle of the abdominal incision and the fundus of the organ. Recovery uneventful and the present condition good.

The technique to be employed in the performance of myomectomy is as follows: First, the preparation of the abdomen by thoroughly scrubbing it with calcium chloride and sodium bicarbonate, then with alcohol and sterilized water. As there is always the possibility of the uterine cavity being opened in the procedure, it should be dilated, curetted and irrigated with an antiseptic solution prior to making the abdominal incision. This removes the diseased endometrium and drains the organ, thus favoring subsequent involution. As the mortality has been greater in those cases in which the uterine cavity has been opened, therefore every precaution should be taken.

The abdominal incision should be made in the median line below the umbilicus, and the lower end of it should not approach the pubes too closely, as the bladder in these cases is often elevated. Adhesions to the parietes, intestines, omentum and other organs should be carefully divided, the tubes and ovaries examined, the uterus brought forward and delivered, and gauze pads packed inside the abdominal cavity to keep the intestines in place and to catch the extravasated blood. If the appendages are diseased, or the tumor is edematous or fibrocystic in character, then the operator should perform supra-vaginal hysterectomy in preference. The number and position of the tumors having been ascertained, an incision into the uterine structure is made over the most prominent one, the white fibrous nodule is grasped with a double tenaculum, then with the finger and Allis dissector it is gen-

tly enucleated with as little injury to the uterine tissue as possible. As many incisions may be made as are necessary to remove all the growths, though frequently several may be removed through the same opening, and unsuspected nodules found as the operation progresses. If much hæmorrhage occurs, it may be temporarily controlled by encircling the neck of the organ with rubber tubing or by manual compression of the main vessels. Of course, in pedunculated growths the operation can be more easily and rapidly performed by transfixing and ligating the pedicle, if possible covering the stump with peritonæum to prevent future adhesions. Greig Smith has observed "that uterine stumps do not become so quickly quiescent as ovarian stumps," hence every precaution should be taken to prevent their begetting trouble.

After the enucleation is completed hæmorrhage should be permanently controlled by ligating the individual vessels when possible, which prevents the bleeding independent of the retraction of the vessels and shrinking of the uterine fibre, and by rows of buried catgut sutures placed from the bottom of the wound upward in succession, bringing the tissues closely together and permitting no space for the accumulation of blood. Finally, the peritonæal surfaces are carefully approximated by superficial sutures of fine silk or catgut.

The success of the operation depends largely upon securing perfect asepsis and complete hemostasis. Drainage is rarely necessary in these cases, unless there is oozing from extensive surfaces from which adhesions have been separated; then the gauze bag of Mikulicz drain may be used. After the irrigation of the abdominal cavity with normal saline solution, allowing a quantity to remain in the cavity, the abdominal incision is effectually closed with a row of figure-of-eight silkworm-gut sutures. The dressings and after treatment are as in ordinary cœliotomy.

Myomectomy is indicated during pregnancy for fibroid tumors which complicate the development of the pregnant uterus, when the size and location of the tumor will permit. Among a series of cases tabulated by Pozzi, in many pregnancy continued and parturition was normal, even where interstitial and intra-ligamentous growths had been removed.

Gynæcology has frequently suffered from the unjust accusations of many of the profession, of unnecessarily sacrificing the internal organs of generation. If on these organs "depend all the specific properties of a woman's mind and body, all her nutrition and nervous sensibility, the delicacy and roundness of her figure, in fact, all other womanly

characteristics," the surgeon should consider well before performing a sacrificial operation.

If patients can be prevailed upon to accept early operation there will be no interference with the natural functions after the extirpation of these growths. By the employment of these methods the conservatism of progress will be marked, and by sparing our patients the ablation of ovaries or the extirpation of the uterus, the amount of physical and psychical suffering so often the sequel of sexual mutilation will be much lessened. Gynæcologists should welcome any operation that will spare woman the nervous and vaso-motor disturbances associated with the premature menopause.

REMOVAL OF UTERINE FIBROIDS WITHOUT HYSTERECTOMY.*

By E. E. Montgomery, M.D., Philadelphia.

In presenting this subject I do not claim to reveal a new surgical device, for the removal of such growths without the sacrifice of the uterus has been done by many operators, and a number of years since.

In view of the hesitancy of many women to undergo a sacrificial operation, and of the prolonged and unpleasant phenomena consequent upon a premature establishment of the menopause, I shall hope to emphasize the employment of the procedure under consideration as an alternative for hysterectomy. There are, I believe, at the present day, but few operators who would prefer hysterectomy to myomectomy for distinctly pedunculated subperitoneal or submucous fibroids, but there is a large number of cases in which the organ is occupied by an interstitial, or a sessile submucous fibroid, or by many growths of all varieties as classified by situation where a healthy functionating organ can still be retained after the removal of the growths. Such practice, with proper aseptic precautions, is attended with less shock and discomfort to the patient that the apparently more simple operation of extirpation of the diseased organ.

The choice of route, whether vaginal or abdominal, will depend upon the situation and size of the growth. All pedunculated or sessile submucous, and interstitial fibroids not too large to pass through the pelvis should be attacked through the vagina; when the growth is so large that it rests above the brim of the pelvis, or the uterus is occu-

* Read before the Chicago Gynæcological Society, February 18, 1898.

pied by a large number of growths, possibly comprising every variety, the abdominal route is preferable.

Of course, it cannot be questioned that there are cases in which the uterine structure is so occupied by growths as to preclude the possibility of their removal with any hope of the subsequent retention of the uterus, nor would the retention of the uterus be good practice where the presence of growths is complicated by the existence of irrecoverable double tubal or ovarian disease. By either the vaginal or abdominal route, in the majority of cases, the procedure is mainly a process of enucleation, in which a blunt dissector and not the finger should play the important rôle. The enucleation can thus be accomplished through a minimum incision with less danger of infection. Small-sized growths of the submucous variety, which have partially or completely dilated the cervix, present but little difficulty in either diagnosis or treatment. If the cervix is insufficiently dilated to permit its investigation and exit, a bilateral incision can be made and the tumor removed. It is where the growth is situated within the body, with the cervix long and undilated, that the difficulty presents. Here a careful investigation of the situation and relation of the growth is an important prerequisite to any operative procedure. Such an investigation is only secured by a dilatation of the canal that will permit of digital explorations. This may be accomplished by repeated packing with gauze (Vulliet's method), dilatation with boguies (Hegar's), the use of tents, or bilateral incision of the cervix to or beyond the internal os (Pean's).

The latter procedure seems too severe a measure for mere diagnostic purposes; will prove unnecessary for the removal of some growths, and the situation of the incision will prove impracticable or embarrassing in the treatment of others. Dilatation by gauze packing is generally slow, frequently ineffective. By bougies will result in tearing before the canal is open sufficiently to admit the finger. Dilatation by tents is the most satisfactory. Sponge tents accomplish the dilatation most rapidly, but are so difficult to render aseptic and so easily infected as to render their employment dangerous. The hollow laminaria tent of good size will in the course of twelve hours, in the majority of cases, render digital exploration possible. Where the dilatation is incomplete it may be then safely effected by the use of the bougies. If the surgeon is not prepared for operation at the time of investigation, the dilatation secured may be maintained twenty-four hours by gauze packing. It must be understood, however, that in all these procedures the most rigid asepsis must be practised.

Having rendered the tumor accessible to the touch, our further procedure must depend upon its situation, size and relation. A small pedunculated tumor will in this manner be rendered almost as accessible to manipulation as if situated in the cervix.

The following case is an excellent illustration: An unmarried woman, aged 35 years, had suffered for over a year with irregular menstruation. Her periods, which formerly lasted from one to three days, now continued from ten days to two weeks. She suffered from occasional severe cramp-like pains during the flow. The uterus was not enlarged, but near its fundus could be recognized a hard mass which was slightly movable. Her physician had assigned change of life as a cause for the irregularity, and accounted for its early appearance by disappointment in a love affair some ten years earlier. The uterus was dilated by two laminaria tents, introduced January 14, 1898. Upon their removal the following morning, the finger could be passed to the fundus, and a fibroid polypus was discovered. Upon the finger a tenaculum was passed and caught in the pedicle. The tumor, steadied by this, a second was hooked into the tumor, by which it was delivered, the small pedicle breaking. Subsequent careful exploration disclosed this to have been the only growth. The fibroid was the size of a small hickory nut. The convalescence was undisturbed.

In 1885 the writer saw an unmarried domestic, aged 45 years, who was so ensanguinated by repeated hemorrhage that her attendant had pronounced it malignant disease.. Dilatation with laminaria tents revealed an egg-sized sessile fibroid in the posterior wall, which was delivered by enucleation after bilatral incision of the cervix. The cervical wound was sutured and the patient recovered after prolonged convalescence, due to faulty technique.

In September, 1896, I saw a young married woman who first began to suffer from dysmenorrhea and menorrhagia, following a fall from a hammock. The patient was much broken in health and her condition was aggravated by a valve lesion causing mitral regurgitation. Fearing the effect of an anæsthetic and operation, she was given ergot, and subsequently thyroid extract, but with such unpleasant effects that they were discontinued. The fundus of the uterus was considerably enlarged; dilatation by a laminaria tent revealed an interstitial fibroid the size of an egg in the posterior wall. An incision was made through the intervening wall with the hope that the administration of ergot would facilitate its extrusion, but the drug was badly borne, and she became so depressed that I decided, regardless of the possible danger, to resort to a radical operation. Under chloroform, the uterus was

dilated with bougies, the anterior and posterior lip each grasped with a double tenaculum and separated by a bilateral incision as high as the internal os. The membrane covering the lower end of the tumor was incised, the growth seized with a double tenaculum and its enucleation with some difficulty accomplished. The cavity was thoroughly irrigated, packed with gauze, the end of which was left in the cervical canal, which was restored by suturing the lateral incisions. Her convalescence was uneventful and her previous good health was established.

Where the growth is large or occupies the anterior wall, the bilateral incision is inappropriate. The growth can be rendered more accessible by a circular incision through the vagina in front of the cervix and splitting the utero-vesical septum, then a vertical incision through the anterior lip and wall of the uterus will expose the growth, which can be enucleated. When large, its delivery can be expedited by morcellation. If necessary, one need not hesitate to extend the incision into the peritoneal cavity. Where preferred, the incision may be made into the anterior wall of the fundus without its being extended through the cervix, additional room being secured by a transverse incision of the base of the tumor. Upon the removal of the growth the uterine incision should be closed with a continuous catgut suture, and the peritonæum and vagina reattached to the uterus. Occasionally an incision through the posterior lip will render the growth more accessible.

The abdominal route affords easy access to large and multiple fibroid growths. An incision should be made over the growth where most accessible, when it is seized with a double tenaculum and the enucleation completed with the blunt dissector. The portion through which the nutrition is supplied and any bleeding vessels should be secured by hæmostats. All the growths, even though small, should be removed. That the growth is submucous or intra-uterine need be no bar to its removal through abdominal incision. Previous curettement and the insertion of gauze packing has been advised where it is probable the uterine cavity will be opened, but such advice is unwise, for the reason that the gauze packing may be mistaken for a small growth and will embarrass the operator when it is necessary to invade the uterine cavity.

All incisions should be closed with continued catgut suture in double rows, where the incision is deep, the last row including a good portion of the peritonæum. In one patient, some months ago, thirteen fibroids were enucleated, five of which were intra-uterine. In another nine were removed, the largest of which was the size of a child's head.

In a patient, age 33 years, unmarried, operated upon January 21, there had been a bloody flow for two months preceding. Fibroid growths were recognized, the uterus was dilated, curetted and packed with gauze, the abdomen opened and three small growths removed from the uterine wall, none of which encroached upon the cavity. The upper part presented the sensation of a mass within, and an incision was made through the fundus into the cavity, but revealed only the gauze packing. This was removed through the opening, the walls carefully explored between the blunt dissector within and the fingers externally without finding a growth. Gauze was reintroduced from above, the uterine wound closed with a double row of catgut sutures. The patient had a normal convalescence, the temperature once reaching 100.2°. In all the operations I have performed in this way I have been greatly surprised at the slight amount of hæmorrhage, and particularly at the want of marked constitutional reaction.

A STUDY OF THE ACTION OF QUININE IN ONE HUNDRED CASES OF LABOR.*

By L. J. Hammond, M.D., Philadelphia.

I have been prompted to make a clinical study of the action of quinine in the parturient woman from being so frequently confronted with the statement from students that the labor has been so long continued, notwithstanding the fact that they have given quinine, and when questioned why such prompt delivery is expected after the administration of this drug, I am generally told that their text books strongly recommend it, and I believe it is taught in several of the medical schools of this city. My further reason, therefore, for endeavoring to determine its value as an ecbolic was largely to satisfy myself whether or not it possessed the merits claimed for it by many, or if not claimed for it, at least so long and universal a usage has seemed to establish in the minds not only of the students, but also of the practitioners throughout the obstetrical world, a precedent, which seems to place it in the front rank of agents which are supposed to increase the expulsive power of the uterus.

That it has so long and universally been administered to parturient women is not, I take it, sufficient argument either for or against it

* Read before the Philadelphia Obstetrical Society, February 3, 1898.

without an effort being made to determine just what amount of clinical difference obtains in a sufficient number of cases between uterine actions after and before its administration. In order to do this it seems to me necessary to secure enough cases similar in their action to accomplish this object. I have therefore endeavored to select one hundred cases as near alike in the behavior of their labor as was possible, a detailed study having been made of the character of the labor before—that is, the frequency of contractions and interval between the contractions. The drug was then given in ten-grain doses and repeated every half hour until thirty grains had been administered.

The first observation was made one-half hour after the administration of the drug and in the beginning of the second stage, and repeated every half hour until the labor was terminated. No case was used for the investigation where the second stage was so far advanced as to justify the belief that it would terminate within an hour, neither were any cases used which might be termed under the head of irregular labor—that is, those where labor was rapidly precipitated; nor were any used where there was any abnormality in the relative size of the fœtal to the maternal parts. There were a few in this group of cases where it was necessary to terminate the labor instrumentally. This was due entirely to my inability to determine from the earlier portion of the labor whether there was this relative difference in the size of the presenting part to the maternal.

The detailed method of making the observations was as follows: Duration of the contraction and the interval between contractions before the drug was given, which I have tabulated in one column, the hour of administration of the drug, duration of the contraction and the interval between contractions after administration of the drug have been noetd in another column; the duration of the contractions being calculated in seconds and the interval in minutes. The duration of the labor previous to the administration has also been noted, as well as the stage in which the drug was given, frequency of administration and frequency of observation, together with the behavior of the uterus after the termination of labor. These, I say, have all been noted in tabular form.

Both primiparas and multiparas have been used. In the case of the latter (m), an effort was made to determine the character and duration of the previous labors, but it was found to be so unsatisfactory that it was abandoned, the number of primiparas being thirty-eight (38), multiparas sixty-two (62).

There were never less than five (5) nor more than seven (7) observations recorded except in two or three cases, where four (4) were made,

owing to the rapidity of the termination of labor, and as so large an amount of time would be consumed in reading these half-hour observations, I have endeavored to boil it down sufficiently to make clear the results of the investigations without too greatly wearing upon your patience, and with this object in view have endeavored to take the maximum number of seconds and the minimum number of seconds and the maximum minutes of interval and the minimum minutes of interval before the drug was given and compare them with the maximum number of seconds and the minimum number of seconds and the maximium minutes of interval and the minimum minutes of interval after the drug was given. Usually from three to five observations were made before administration of the drug, no observation being made during the very last moments while the head was passing through the vulva.

The study of the action of the uterus after being emptied of its product of conception was to note, first, whether any excess of bleeding, second, whether firm contraction immediately after it was emptied, third, whether any condition of hour-glass contraction took place.

As the report shows, but five evinced any tendency to excessive bleeding, and in no case was there any contraction of the lower segment (hour-glass) noted. In all the rest the uterus promptly and permanently retracted after prompt expulsion of the placenta.

In but one of the cases was the temperature, pulse or respiration sufficiently disturbed from the normal course to be noteworthy, and that was in the third case in the table, which shows pulse 110, repiration slow, 14, temperature normal.

It will be seen from the tabulated report of the thirty-eight (38) primiparas, thirty-five (35) show an increase in the frequency of contractions after the administration of the drug, two (2) show a decrease and one (1) no change.

We find upon further examination of the table that eight (8) of these cases show increase not exceeding one minute; therefore it will be fair to state that there was decided change in twenty-seven (27).

As to the duration of contraction, we find, of the thirty-eight (38) primiparas one (1) decreased and two (2) show no change.

Of the sixty-two (62) multiparas four (4) show an increase in the interval between the contractions and but one (1) show no change, while twenty-seven (27) show that the increase in the frequency of contractions did not exceed one minute.

On the other hand, a study of the duration of the contractions shows that four (4) of the sixty-two (62) cases show a diminution in

the duration of the contractions after the use of the drug and in two (2) no change was noted.

In comparing the frequency of contractions in multiparas with those of primiparas, we find that the interval between contractions is slightly longer in the former than in the latter, while on the whole the duration of contractions in multiparas is longer than that of the primiparas.

I think it is important to state that these observations were made on women living in courts and alleys, mostly in the extreme lower section of the city, where the sanitary conditions, as well as the food stuffs used, were far below what is necessary for the safety and comforts of life. The district is said to be the most malarious in the city, and taken all in all, I believe this class of women to be an ideal one for securing the best results from any therapeutic agent whose benefits are supposed to be produced by its action as a tonic.

I realize the great difficulty in determining just what amount of the increase both in the duration and frequency of contractions that are noted in these observations are due to the action of quinine; first, because it is well known that as the second stage of labor progresses the interval between contractions is diminished, as well as the duration of the contractions increased. The prompt increase, however, in the duration of contraction and the diminution of the interval between contractions, which is so uniformly shown to have occurred in this series of cases, and in the hands of twenty-five (25) different observers, would seem to justify the belief that this drug does exercise a marked influence on the expulsive powers of the uterus, and I am quite satisfied that, given a woman whose muscular system is below par and an atonic condition of all the muscular structures of the body, I believe the administration of quinine, begun in the early stage of labor, will not only increase the expulsive powers of the uterus by its general tonic action, but it will also, through this same action, tend greatly toward lessening the dangers of septic invasion, which this class of cases is particularly liable to, owing to this impoverished condition of the system. In other words, it has been my experience to find that uterine inertia, which is said by some to be so common, is extremely rare, and is found only in the class of cases that I have here described. From a large experience, both in this class and a better class of cases, I am convinced that the so-called uterine inertia does not exist in any other class of cases than that where all the other muscles are tired, or, more properly defined, where there is general muscular atony.

As above intimated, these investigations were, many of them, made by the students of the University of Pennsylvania, though entirely under my supervision.

	Duration of Labor before Drug was given,	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
1.	M. 18 hrs.	a. 30 grains. b. ½ hourly.	a. Contractions occurred every 12 to 3 min., lasting 40 to 90 seconds. b. Begin. of 2d.	½ hr.	Every ¼ hour.	8.30 p.m. 90 sec. 8.46 60 9.03 120 9.18 80 9.30 120	9 min. 4 3 2½ 2	Prompt expulsion of placenta & firm contraction.	Normal.
2.	P. 9 hrs.	a. 30 grains. b. ½ hourly.	a. 10 m., lasting 28 s. b. Beginning of 2d.	½ hr.	Every ½ hour.	11.00 p.m. 60 sec. 11.30 60 12.00 48 12.30 80 1.00 a.m. 96 1.30 102	10 min. 10 6 5 2 1½	Normal expulsion and anteaction of uterus and placenta.	Normal.
3.	P. 12 hrs.	a. 10 grains. b. ½ hourly.	a. 10 m., lasting 20 s. b. End of 1st.	½ hr.	½ hour.	11.00 a.m. 40 sec. 11.30 40 12.00 m. 60 12.30 58 1.00 p.m. 80 1.30 80 After this almost constantly.	15 min. 15 10 6 6 2	Did not contract, free hæmorrhage	Pul., 110; resp., slow; temp., normal; frequent urination.
4.	P. 8 hrs.	a. 10 grains. b. ½ hourly.	a. 82 m., lasting 60 s. b. Beginning of 2d.	½ hr.	½ hour.	6.00 p.m. 80 sec. 6.30 80 7.00 78 7.30 90 8.00 120	5 min. 3 1½ 2 1	Prompt expulsion of placenta and contraction.	Normal.
5.	P. 8 hrs.	a. 10 grains. b. ½ hourly.	a. 52 m., lasting 65 s. b. Beginning of 2d.	½ hr.	½ hour.	5.00 a.m. 60 sec. 5.30 60 6.00 68 6.30 48 7.00 70 7.30 100	3 min. 3 8 2 1 1	Normal.	Normal.
6.	P. 24 hrs.	a. 10 grains. b. ½ hourly.	a. 8 to 3 m., lasting 30 to 60 s. b. Beginning of 2d.	½ hr.	½ hour.	8.44 p.m 60 sec. 9.17 30 9.46 55 10.04 30 10.20 40 10.30 30	3 min. 6 3 2 2 1½	Normal.	Normal.

7.	P. 9 hrs.	a. 10 grains. b. ½ hourly.	a. 5 to 7 m., lasting 23 to 38 s. b. 2d stage.	½ hr.	½ hour.	10.00 p.m. 30 sec. 5 min. 10.30 35 5 11.00 45 3 11.30 58 3 12.00 53 2½ 12.30 80 2	Normal.	Normal.
8.	P. 14 hrs.	a. 10 grains. b. ½ hourly.	a. 5 to 9 m., lasting 38 to 24 s. b. 2d stage.	½ hr.	½ hour.	12.00 m. 38 sec. 6 min. 12.30 45 6½ 1.00 45 5 1.30 60 2 2.00 90 1½	Normal.	Normal.
9.	P. 12 hrs.	a. 10 grains. b. ½ hourly.	a. 1½ to 2½ m., lasting 40 to 90 s. b. Advanced 2d stage.	½ hr.	½ hour.	6.30 p.m. 68 sec. 1½ min. 7.00 85 1¾ 7.30 98 3½	Normal.	Normal.
10.	P. 10 hrs.	a. 10 grains. b. ½ hourly.	a. 10 to 4 m., 30 to 60 s. b. Beg. 2d.	½ hr.	½ hour.	6.00 p.m. 38 sec. 10 min. 6.30 26 7 7.00 30 3 7.30 68 5 8.00 60 4 8.30 80 3 9.00 88 1½	Normal.	Normal.
11.	P. 8 hrs.	a. 10 grains. b. ½ hourly.	a. 4 to 7 m., lasting 30 to 68 s. b. Beginning of 2d.	½ hr.	½ hour.	11.30 p.m. 38 sec. 3 min. 12.00 40 4 12.30 60 2 1.00 a.m. 60 2 1.30 80 1½ 2.00 80 1	Normal.	Normal.
12.	P. 8 hrs.	a. 10 grains. b. ½ hourly.	a. 5 to 1½ m., lasting 20 to 38 s. b. 2d stage.	½ hr.	½ hour.	8.00 a.m. 28 sec. 5 min. 8.30 38 5 9.00 70 3 9.30 90 2	Normal.	Normal.
13.	P. 10 hrs.	a. 10 grains. b. ½ hourly.	a. 3 to 4 m., 40 to 60 s. b. 2d stage.	½ hr.	½ hour.	8.30 p.m. 40 sec. 3 min. 9.00 56 3½ 9.30 60 2 10.00 90 1½	Normal.	Normal.
14.	P. 10 hrs.	a. 10 grains. b. ½ hourly.	a. 4 to 5 m., 38 to 4 s. b. Beg. 2d.	½ hr.	½ hour.	11.00 a.m. 38 sec. 3 min. 11.30 36 5 12.00 m. 50 2 12.30 30 2½ 1.00 40 2	Cont'd feebly, considerable bleeding.	Normal.

P.—Primipara.
M.—Multipara.

M.—Minutes interval.
S.—Seconds contractions.

	Duration of Labor before Drug was given.	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
15.	P. 12 hrs.	a. 10 grains. b. ½ hourly.	a. 8 to 12 m., 28 to 49 s. b. Beginning of 2d.	½ hr.	½ hour.	10.30 p.m. 20 sec. 11.00 20 11.30 28 12.00 20 12.30 35 1.00 60 1.30 80	8 min. 8½ 6 6 5 3 2	Normal.	Normal.
16.	P. 16 hrs.	a. 10 grains. b. ½ hourly.	a. 5 to 8 m., lasting 38 to 45 s. b. 2d stage.	½ hr.	½ hour.	4.00 p.m. 38 sec. 4.30 35 5.00 50 5.30 90	8 min. 5 3 2		
17.	P. 11 hrs.	a. 10 grains. b. ½ hourly.	a. 3 to 5 m., 45 to 60 s. b. 2d stage.	½ hr.	½ hour.	6.00 a.m. 48 sec. 6.30 60 7.00 36 7.30 40 8.00 90	3 min. 2 2½ 2 1		
18.	P. 20 hrs.	a. 10 grains. b. ½ hourly.	a. 4 to 7 m., lasting 30 to 60 s. b. 2d stage.	½ hr.	½ hour.	11.00 p.m. 38 sec. 11.30 22 12.00 60 12.30 58 1.00 60 1.30 68	4 min. 4 3 3 3 1½	Normal.	Normal.
19.	P. 10 hrs.	a. 10 grains. b. ½ hourly.	a. 3 to 2 m., 38 to 60 s. b. Beginning of 2d.	½ hr.	½ hour.	1.00 p.m. 40 sec. 1.30 48 2.00 60 2.30 60 3.00 62 3.30 80	3 min. 3½ 2 2 2 ½	Normal.	Normal.
20.	P. 12 hrs.	a. 10 grains. b. ½ hourly.	a. 11 to 1 m., lasting 30 to 50 s. b. Beginning of 2d.	½ hr.	½ hour.	6.00 a.m. 30 sec. 6.30 36 7.00 40 7.30 60 8.00 72	10 min. 8 8 2 3	Normal.	Normal.

21.	P. 14 hrs.	a. 10 grains. b. ½ hourly.	a. 4 to 6 m., lasting 30 to 46 s. b. 2d stage.	½ hr.	½ hour.	3.00 a.m. 38 sec. 4 min. 3.30 45 4½ 4.00 30 2 4.30 60 1½ 5.00 68 2	Normal.	Normal.
22.	P. 20 hrs.	a. 10 grains. b. ½ hourly.	a. 1½ to 3 m., 50 to 68 s. b. Advanced 2d stage.	½ hr.	½ hour.	4.00 p.m. 60 sec. 2 min. 4.30 60 1 5.00 68 1½ 5.30 80 ½	Normal.	Normal.
23.	P. 10 hrs.	a. 10 grains. b. ½ hourly.	a. 3 to 5 m., 38 to 50 s. b. 2d stage.	½ hr.	½ hour.	8.00 a.m. 37 sec. 3½ min. 8.30 42 4 9.00 60 2 9.30 60 2½ 10.00 80 2	Normal.	Normal.
24.	P. 10 hrs.	a. 10 grains. b. ½ hourly.	a. 7 to 4 m., 45 to 60 s. b. Beginning of 2d.	½ hr.	½ hour.	10.30 a.m. 40 sec. 7 min. 11.00 38 3 11.30 60 5 12.00 60 2 1.00 80 1	Normal.	Normal.
25.	P. 8 hrs.	a. 10 grains. b. ½ hourly.	a. 10 to 1 m., 18 to 60 s. b. 2d stage.	½ hr.	½ hour.	4.30 a.m. 26 sec. 8 min. 5.00 38 6 5.30 40 3 6.00 38 1 6.30 60 1	Normal.	Normal.
26.	P. 8 hrs. M. —	a. 40 grs. 10 at time. b. ½ hourly.	a. 3 to 7 m., lasting 22 to 38 s. b. 2d stage.	½ hr.	½ hour.	6.00 p.m. 46 sec. 6 min. 6.30 54 3 7.00 40 2 7.30 60 1 8.00 56 1½	Prompt expulsion and contraction.	Normal.
27.	P. 14 hrs. M. —	a. 30 grains. b. ½ hourly, grains 10	a. 2 to 2½ m., 24 to 38 s. b. 2d stage.	½ hr.	½ hour.	10.00 a.m. 38 sec. 2½ min. 10.30 30 3 11.00 58 1½ 11.30 65 2 12.00 72 Constantly.	Prompt contraction. Head could not mold; forceps	
28.	P. 20 hrs. M. —	a. 30 grains. b. 10 ½ hour. hour.	a. 3 to 5 m., 22 to 48 s. b. Advanced 2d stage.	½ hr.	½ hour.	3.00 a.m. 26 sec. 5½ min. 3.30 32 5 4.00 22 6 4.30 48 2 5.00 78 1½	Normal.	

	Duration of Labor before Drug was given,	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
29.	P. 12½ " M. —	a. 30 grains. b. 10 ½ hour. hour.	a. 12 to 7 m., lasting 12 to 30 s. b. Beginning of 2d.	½ hr.	½ hour.	10.00 p.m. 18 sec. 10.30 18 11.00 16 11.30 36 12.00 60 12.30 60 1.00 90	10 min. 7 7 3 4 1 1	Normal.	
30.	P. 24 hrs. M. —	a. 30 grains. b. 10 ½ hour. hour.	a. 3½ to 6 m., lasting 40 to 63 s. b. 2d stage.	½ hr.	½ hour.	2.00 a.m. 42 sec. 2.30 62 3.00 42½ 3.30 70 4.00 70 4.30 72	4 min. 2 2½ 3 1 1½	Normal.	
31.	P. 11 hrs. M. —	a. 30 grains. b. 10 ½ hour. hour.	a. 6 to 12 m., lasting 18 to 30 s. b. Beginning of 2d.	½ hr.	½ hour.	2.30 p.m. 22 sec. 3.00 22 3.30 40 4.00 46 4.30 60 5.00 38 6.00 60	11 min 3 5 7 4 6 1½	Normal.	
32.	P. 12 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 4 to 7 m., lasting 29 to 40 s. b. 2d stage.	½ hr.	½ hour.	7.00 a.m. 38 sec. 7.30 38 8.00 46 8.30 62 9.00 68 9.30 60	3 min. 4½ 2 4 1½ 1	Normal.	
33.	P. 13 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 6 to 10 m., lasting 12 to 30 s. b. 2d stage.	½ hr.	½ hour.	3.00 a.m. 18 sec. 3.30 16 4.00 28 4.30 36 5.00 60 5.30 60	10 min. 6 3½ 3 1 1	Normal.	

34.	P. 8 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 3 to 7 m., lasting 16 to 28 s. b. 2d stage.	½ hr.	½ hour.	4.30 p.m. 28 sec. 5 min. 5.00 28 3 5.30 33 5 6.00 60 1½ 6.30 60 1½ 7.00 70 1 7.30 90 ½	Normal.	
35.	P. 15 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 5 to 11 m., lasting 18 to 38 s. b. 2d stage.	½ hr.	½ hour.	8.30 p.m. 20 sec. 7 min. 9.00 38 3 9.30 36 5 10.00 48 2 10.30 60 2 11.00 68 1	Normal.	
36.	P. 6 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 8 to 12 m., lasting 12 to 36 s. b. 2d stage.	½ hr.	½ hour.	7.00 a.m. 12 sec. 10 min. 7.30 26 10 8.00 38 6 8.30 38 5 9.00 50 5 9.30 62 2 10.00 90 2	Normal.	
37.	P. 8 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 8 to 15 m., lasting 10 to 48 s. b. 2d stage.	½ hr.	½ hour.	1.00 a.m. 15 sec. 10 min. 1.30 25 7 2.00 36 2 2.30 40 4 3.00 60 2 3.30 68 2	Normal.	
38.	P. 12 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 7 to 4 m., lasting 20 to 48 s. b. 2d stage.	½ hr.	½ hour.	4 00 a.m. 38 sec. 3 min. 4.30 60 3½ 5.00 80 1½ 5.30 74 2 6.00 80 ½	Normal.	
39.	P. 9 hrs. M. —	a. 30 grains. b. 10 every ½ hour.	a. 6 to 2½ m., lasting 18 to 50 s. b. 2d stage.	½ hr.	½ hour.	11.00 a.m. 18 sec. 6 min. 11.30 26 2 12.00 22 5 12.30 46 4 1.00 70 1½ 1.30 86 3 2.00 100 1	Normal.	

	Duration of Labor before Drug was given.	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
40.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 3½ m., lasting 38 to 60 s. b. 2d stage.	½ hr.	½ hour.	4.30 p.m. 40 sec. 5.00 42 5.30 60 6.00 52 6.30 68	2½ min. 3 2 1½ 2	Normal.	
41.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2 m., lasting 13 to 48 s. b. Beginning of 2d.	½ hr.	½ hour.	9.00 a.m. 40 sec. 9.30 50 10.00 38 10.30 60 11.00 62 11.30 58	4 min. 2 2 2 2½ 1	Normal.	
42.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 4½ m., lasting 18 to 55 s. b. 2d stage.	½ hr.	½ hour.	1.00 a.m. 26 sec. 1.30 22 2.00 38 2.30 46 3.00 70 3.30 90	3 min. 5 2 2½ 1 ½	Normal.	
43.	P. — M. 5 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 6 to 10 m., lasting 12 to 38 s. b. 2d stage.	½ hr.	½ hour.	5.00 p.m. 20 sec. 5.30 18 6.00 32 6.30 76 7.00 90	8 min. 11 3 5 1	Feebly, excess of bleeding.	
44.	P. — M. 7 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 6 m., lasting 22 to 58 s. b. 2d stage.	½ hr.	½ hour.	1.31 p.m. 34 sec. 2.00 45 2.30 26 3.00 60 3.30 72 4.00 70 4.30 86	3½ min. 4 2 1 4 2 2	Normal.	
45.	P. — M. 10 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3½ to 5 m., lasting 20 to 36 s. b. 2d stage.	½ hr.	½ hour.	7.00 p.m. 27 sec. 7.30 36 8.00 29 8.30 48 9.00 60 9.30 68	3 min. 2 5 1½ 2 1	Normal.	

46.	P. — M. 22 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 2½ to 3 m., lasting 38 to 60 s. b. 2d stage.	½ hr.	½ hour.	3.00 p m. 55 sec. 1 min 3.30 49 ½ 4.00 62 1 4.30 60 2 5 00 100 1 5.30 112 ½	Normal.	
47.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 5 m., lasting 24 to 58 s. b. 2d stage.	½ hr.	½ hour.	5.00 a m. 33 sec. 2 min 5 30 38 3½ 6.00 56 2 6.30 62 1½ 7.00 80 ¾	Normal.	
48.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 7 to 4 m., lasting 12 to 48 s. b. 2d stage.	½ hr.	½ hour.	9.00 p.m. 18 sec. 5 min. 9.30 34 5 10.00 70 4 10.30 68 2½ 11.00 60 2 11.30 84 1½	Normal.	
49.	P. — M. 10 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 11 to 3½ m., lasting 18 to 36 s. b. 2d stage.	½ hr.	½ hour.	1.00 p.m. 21 sec. 11 min. 1.30 28 10½ 2.00 32 7 2.30 46 3 3.00 62 1½ 3.30 88 2	Normal.	
50.	P. — M. 10 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 7 m., lasting 24 to 66 s. b. 2d stage.	½ hr.	½ hour.	10.30 a.m. 38 sec. 5 min 11.00 38 5 11.30 46 3½ 12.00 62 2 12 30 84 7½ 1.00 78 1	Normal.	
51.	P. — M. 14 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 8 m., lasting 20 to 58 s. b. 2d stage.	½ hr.	½ hour.	1.30 a.m. 18 sec. 6 min. 2.00 36 7½ 2.30 54 5 3.00 50 2 3.30 58 1 4.00 60 1½	Firm contraction after prompt expulsion of placenta.	
52.	P. — M. 9 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 2 to 5½ m., lasting 22 to 43 s. b. 2d stage.	½ hr.	½ hour.	12.00 m. 28 sec. 3½ min. 12.30 26 2 1.00 34 1½ 1.30 56 2 2.00 58 1 2.30 60 1	Firm contraction after prompt expulsion of placenta.	

	Duration of Labor before Drug was given.	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
53.	P. — M. 20 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 2 to 5 m., lasting 36 to 50 s. b. 2d stage.	½ hr.	½ hour.	8.00 a.m. 38 sec. 8.30 36 9.00 54 9.30 58 10.00 60 10.30 70	5 min. 5 2½ 2 1 ½	Firm contraction after prompt expulsion of placenta.	
54.	P. — M. 24 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 12 m., lasting 10 to 48 s. b. 2d stage.	½ hr.	½ hour.	11.00 p.m. 12 sec. 11.30 22 12.00 38 12.30 60 1.00 68 1.30 90	10 min. 7 10 6 3 1	Did not contract promptly.	
55.	P. — M. 18 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 2½ m., 28 to 50 s. b. Beginning of 2d.	½ hr.	½ hour.	5.00 p.m. 36 sec. 5.30 42 6.00 38 6.30 60 7.00 96	3 min. 3 1½ 2 1	Normal.	
56.	P. — M. 9 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 6 to 3 m., lasting 18 to 40 s. b. 2d stage.	½ hr.	½ hour.	3.00 a.m. 17 sec. 3.30 22 4.00 46 4.30 38 5.00 60 5.30 102	4 min. 5½ 2 2 1 1½	Normal.	
57.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 5 m., lasting 12 to 28 s. b. 2d stage.	½ hr.	½ hour.	5.00 a.m. 10 sec. 5.30 14 6.00 28 6.30 56 7.00 64	8 min. 5½ 3 4 3	Normal.	
58.	P. — M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 8 to 3 m., lasting 22 to 40 s. b. 2d stage.	½ hr.	½ hour.	3.00 a.m. 28 sec. 3.30 40 4.00 36 4.30 42 5.00 72 5.30 68	7 min. 9 5 2 3 1½	Normal.	

59.	P. — M. 16 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 3½ m., lasting 12 to 48 s. b. Beginning of 2d.	½ hr.	½ hour.	1.00 p.m. 17 sec. 3 min. 1.30 20 1½ 2.00 13 1 2.30 58 2 3.00 70 2½ 3.30 80 1 4.00 96 ½	Normal.	
60.	P. — M. 16 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3½ to 4 m., lasting 28 to 42 s. b. 2d stage.	½ hr.	½ hour.	5.00 a.m. 38 sec. 2 min. 5.30 38 3½ 6.00 50 1½ 6.30 46 1 7.00 67 1	Slight excess of bleeding.	
61.	P. — M. 21 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 4 m., lasting 60 to 48 s. b. 2d stage.	½ hr.	½ hour.	7.00 p.m. 60 sec. 12 min. 7.30 58 7 8.00 68 3 8.30 62 3½ 9.00 80 1½	Normal.	
62.	P. — M. 14 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 8 m., lasting 18 to 80 s. b. 2d stage.	½ hr.	½ hour.	7.30 p.m. 19 sec. 7 min. 8.00 17 8 8.30 23 3 9.00 48 5 9.30 86 2 10.00 80 4	Normal.	
63.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 3½ m., lasting 30 to 58 s. b. 2d stage.	½ hr.	½ hour.	3.00 a.m. 36 sec. 3¼ min. 3.30 38 2 4.00 47 ½ 4.30 63 3 5.00 60 1 5.30 79 1½	Normal.	
64.	P. — M. 5 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 5 m., 36 to 48 s. b. Beginning of 2d.	½ hr.	½ hour.	4.00 p.m. 43 sec. 4 min. 4.30 41 2½ 5.00 58 4 5.30 48 4½ 6.00 67 2	Normal.	
65.	P. — M. 7 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 5 m., lasting 26 to 40 s. b. 2d stage.	½ hr.	½ hour.	2.30 p.m. 23 sec. 9 min. 3.00 34 5 3.30 26 5 4.00 44 3½ 4.30 62 2 5.00 76 2½	Normal.	

	Duration of Labor before Drug was given, and Duration of Previous Labor.	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
66.	P. — M. 10 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 6 m., lasting 22 to 60 s. b. 2d stage.	½ hr.	½ hour.	9.00 p.m. 20 sec. 9.30 16 10.00 43 10.30 68 11.00 63	6 min. 3 4 3 1½	Normal.	
67.	P. — M. 11 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 3 m., lasting 28 to 58 s. b. 2d stage.	½ hr.	½ hour.	8.30 p.m. 32 sec. 9.00 42 9.30 38 10.00 64 10.30 46 11.00 90	8 min. 4 3 3 2 3	Normal.	
68.	P. — M. 4 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 12 to 3 m., lasting 16 to 58 s. b. Beginning of 2d.	½ hr.	½ hour.	6.00 p.m. 18 sec. 6.30 26 7.00 19 7.30 48 8.00 60 8.30 58	10 min. 10 6 4 4 7½	Normal.	
69.	P. — M. 3 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 2 m., lasting 30 to 64 s. b. Beginning of 2d.	½ hr.	½ hour.	2.00 a.m. 38 sec. 2.30 26 3.00 48 3.30 64 4.00 66 4.30 92	3 min. 3½ 1½ 4 3 1	Normal.	
70.	P. — M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 2 m., lasting 20 to 56 s. b. 2d stage.	½ hr.	½ hour.	10.00 p.m. 22 sec. 10.30 36 11.00 28 11.30 48 12.00 47 12.30 63	8 min. 8 5 2 1 1½	Normal.	
71.	P. — M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 3½ m., lasting 12 to 52 s. b. 2d stage.	½ hr.	½ hour.	1.00 p.m. 16 sec. 1.30 24 2.00 40 2.30 46 3.00 52 3.30 78	2½ min. 4 3 2½ 3 2	Normal.	

72.	P. — M. 7 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 8 to 2 m., lasting 30 to 52 s. b. 2d stage.	½ hr.	½ hour.	10.30 p.m. 32 sec. 6 m'n 11.00 54 4 11.30 46 5 12.00 63 3 12.30 80 1	Normal.	
73.	P. — M. 6 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 14 to 2½ m., lasting 16 to 60 s. b. 2d stage.	½ hr.	½ hour.	4.00 a.m. 18 sec. 11 min. 4.30 12 11 5.00 36 6 5.30 54 3 6.00 63 2½ 6.30 58 4 7.00 76 1	Normal.	
74.	P. — M. 9 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 3 m., lasting 21 to 58 s. b. 2d stage.	½ hr.	½ hour.	5.00 a.m. 26 sec. 5 min. 5.30 38 2½ 6.00 21 2 6.30 60 2½ 7.00 58 1½	Normal.	
75.	P. — M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 3½ m., lasting 32 to 40 s. b. 2d stage.	½ hr.	½ hour.	6.30 a.m. 32 sec. 2 min. 7.00 37 2½ 7.30 46 3 8.00 38 1½ 8.30 56 2	Normal.	
76.	P. — M. 6 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 6 to 2½ m., lasting 28 to 34 s. b. 2d stage.	½ hr.	½ hour.	6.30 a.m. 26 sec. 5 min. 7.00 32 3 7.30 43 2½ 8.00 62 3 8.30 44 1½	Contracted firmly and promptly.	
77.	P. — M. 8½ "	a. 30 grains. b. 10 every ½ hour.	a. 7 to 3 m., lasting 35 to 79 s. b. 2d stage.	½ hr.	½ hour.	2.30 a.m. 33 sec. 6 min. 3.00 37 6 3.30 46 3 4.00 62 3½ 4.30 68 4 5.00 68 3 5.30 99 2	Contracted firmly and promptly.	
78.	P. — M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 2½ m., lasting 18 to 63 s. b. 2d stage.	½ hr.	½ hour.	8.00 a.m. 18 sec. 9 min. 8.30 28 4 9.00 16 5 9.30 24 2½ 10.00 46 3 10.30 68 1½ 11.00 92 1	Contracted firmly and promptly.	

	Duration of Labor before Drug was given.	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
79.	P. — M. 10 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2 m., lasting 43 to 56 s. b. 2d stage.	½ hr.	½ hour.	5.00 p.m. 38 sec. 5.30 54 6.00 49 6.30 39 7.00 63 7.30 84	5 min. 5 13 1½ ½ 1	Contracted firmly and promptly.	
80.	P. — M. 5 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 7 to 4 m., lasting 38 to 70 s. b. 2d stage.	½ hr.	½ hour.	2.00 p.m. 48 sec. 2.30 44 3.00 68 3.30 80 4.00 88	5 min. 3 4½ 2 1½	Contracted firmly and promptly.	
81.	P. — M. 7 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 7 to 3½ m., lasting 12 to 58 s. b. 2d stage.	½ hr.	½ hour.	8.00 p.m. 17 sec. 8.30 17 9.00 40 9.30 38 10.00 60 10.30 60	3 min 7 3½ 1 2 1½		
82.	P. — M. 9 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2 m., lasting 22 to 68 s. b. 2d stage.	½ hr.	½ hour.	6.00 p.m. 32 sec. 6.30 28 7.00 41 7.30 63 8.00 68 9.00 63	5 min. 3 5 3½ 1 1		
83.	P. — M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2 m., lasting 38 to 72 s. b. 2d stage.	½ hr.	½ hour.	5.00 a.m. 38 sec. 5.30 32 6.00 26 6.30 49 7.00 60 7.30 80	4 min 4½ 2 1½ 1 1		
84.	M. 9 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 2½ m., lasting 16 to 70 s. b. 2d stage.	½ hr.	½ hour.	2.30 a.m. 23 sec. 3.00 30 3.30 28 4.00 56 4.30 62 5.00 70	3 min. 2½ 3½ 1 2½ 3		

85.	M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 4 m., lasting 18 to 56 s. b. 2d stage.	½ hr.	½ hour.	1.30 a.m. 28 sec. 8 min. 2.00 16 11 2.30 46 6 3.00 60 3 3.30 66 1½ 4.00 38 2		
86.	M. 14 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 8 to 1 m., 32 to 58 s. b. Beginning of 2d.	½ hr.	½ hour.	4.00 p.m. 36 sec. 11 min. 4.30 48 7 5.00 24 10 5.30 58 3 6.00 48 3		
87.	M. 10 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 3 m., lasting 18 to 58 s. b. 2d stage.	½ hr.	½ hour.	7.00 p.m. 21 sec. 5 min. 7.30 38 2½ 8.00 60 6 8.30 44 4 9.00 56 2 9.30 62 3½		
88.	M. 6 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 8 to 2½ m., lasting 20 to 46 s. b. 2d stage.	½ hr.	½ hour.	1.30 a.m. 22 sec. 8 min. 2.00 18 8 2.30 34 1½ 3.00 19 3 3.30 48 1½ 4.00 38 2		
89.	M. 6 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2 m., lasting 36 to 50 s. b. 2d stage.	½ hr.	½ hour.	11.00 a.m. 48 sec. 3 min. 11.30 56 4½ 12.00 60 3 12.30 38 2 1.00 46 2 1.30 58 2½		
90.	M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 15 to 4½ m., lasting 30 to 62 s. b. 2d stage.	½ hr.	½ hour.	10.00 a.m. 50 sec. 15 min. 10.30 60 9 11.00 30 4 11.30 30 6 12.00 45 35 12.30 40 3	Inertia, forceps, prompt contraction after delivery	
91.	M. 9 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 7 to 2½ m., lasting 25 to 80 s. b. 2d stage.	½ hr.	½ hour.	9.30 a.m. 50 sec. 2 min. 10.00 23 6½ 10.30 25 5 11.00 30 10 11.30 100 2 12.00 130 2	Normal.	

	Duration of Labor before Drug was given,	Amount of Drug and Frequency of Administration.	Character of Labor before Drug was given, and Stage Drug was given.	First Observation made after administration	Frequency of Observation.	Duration of Contraction. Interval between Contractions. Contraction.	Interval.	Action of Uterus after Labor.	Temperature, Pulse, and Respiration.
92.	M. 8 hrs.	1. 30 grains. b. 10 every ½ hour.	a. 7 to 3 m., 18 to 56 s. b. Beginning of 2d.	½ hr.	½ hour.	11.00 a.m. 38 sec. 11.30 52 12.00 52 12.30 33 1.00 42—38	5½ min 3 3 4 1½	Normal.	
93.	M. 12 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2 m., lasting 46 to 80 s. b. 2d stage.	½ hr.	½ hour.	5.00 a.m. 25 sec. 5.30 26 6.00 46 6.30 42 7.00 52 7.30 38	4 min. 4 4 1½ 2 1	Normal.	
94.	M. 5 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 3 to 2 m., lasting 50 to 55 s. b. 2d stage.	½ hr.	½ hour.	11.00 a.m. 50 sec. 11.30 55 12.00 71 12.30 66 1.00 69 1.30 60	5 min. 3 3 5 3 3½	Normal	
95.	M. 7 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 10 to 5 m., lasting 12 to 40 s. b. 2d stage.	½ hr.	½ hour.	2.00 p.m. 18 sec. 2.30 16 3.00 34 3.30 29 4.00 58	10 min. 10 7 5 2½	Normal.	
96.	M. 7 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 8 to 2 m., lasting 20 to 58 s. b. 2d stage.	½ hr.	½ hour.	4.00 p.m. 28 sec. 4.30 46 5.00 32 5.30 30 6.00 49 6.30 76	8 min. 7 2 5 1 1½	Normal.	
97.	M. 3 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 5 to 2½ m., lasting 40 to 58 s. b. 2d stage.	½ hr.	½ hour.	9.00 p.m. 50 sec. 9.30 52 10.00 50 10.30 58 11.00 80 11.30 80	2 min 3 2 2½ 1 ½	Normal.	

98.	M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 6 to 1 m., lasting 24 to 55 s. b. 2d stage.	½ hr.	½ hour.	8.00 a.m. 38 sec. 5 min. 8.30 46 6 9.00 32 2 9.30 55 2½ 10.00 61 1 10.30 60 1½	Normal.	
99.	M. 8 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 6 to 2½ m., lasting 18 to 45 s. b. 2d stage.	½ hr.	½ hour.	10.00 a.m. 22 sec. 5 min. 10.30 34 2½ 11.00 28 3 11.30 56 4 12.00 70 2	Normal.	
100.	M. 3 hrs.	a. 30 grains. b. 10 every ½ hour.	a. 4 to 2 m., lasting 40 to 60 s. b. 2d advanced.	½ hr.	½ hour.	1.30 a.m. 55 sec. 1 min. 2.00 62 1½ 2.30 80 3 3.00 44 1 3.30 55 ½ 4.00 48 1	Normal.	

No. of Case.	Primipara or Multipara. Duration of labor before drug was given.	Maximum and Minimum minutes between contractions.						Action of Uterus after delivery.	Maximum and Minimum seconds of duration of contractions.					
		Before (five observations) Administration.			After (six or seven observations) Administration.				Before (five observations) Administration.			After (five to seven observations) Administration.		
	Hours.	Max.	Min.	Av.	Max.	Min.	Av.	Result.	Max.	Min.	Av.	Max.	Min.	Av.
1.	M. 18	12	3	7½	9	2	5½		90	40	65	120	60	90
2.	P. 9	10	2	6	10	1½	5¼		28	28	28	102	48	75
3.	P. 12	10	½	5¼	15	2	8½	Contracted slowly, Free hæmorrhage.	20	20	20	80	40	60
4.	P. 8	8	2	5	5	1	3		60	60	60	80	40	60
5.	P. 8	5	2	3½	3	1	2		65	65	65	100	48	74
6.	P. 24	8	3	5½	7	1½	4¼		60	30	45	60	30	45
7.	P. 9	7	5	6	5	2½	3¾		38	23	30½	80	30	55
8.	P. 14	9	5	7	6	1½	3¾		38	24	31	90	38	64

P.—Primipara. M.—Multipara.

No. of Case.	Primipara or Multipara. Duration of labor before drug was given.	Maximum and Minimum minutes between contractions.						Action of Uterus after delivery.	Maximum and Minimum seconds of duration of contractions.					
		Before (five observations) Administration.			After (six or seven observations) Administration.				Before (five observations) Administration.			After (five to seven observations) Administration.		
	Hours.	Max.	Min.	Av.	Max.	Min.	Av.	Result.	Max.	Min.	Av.	Max.	Min.	Av.
9.	P. 12	2½	1½	2	1½	½	1		90	40	65	98	68	83
10.	P. 10	10	4	7	10	1½	5¾		60	30	45	88	26	57
11.	P. 8	7	4	5½	3	1	2		68	30	49	80	38	59
12.	P. 8	5	1½	3¼	5	2	3½		38	20	29	90	28	59
13.	P. 10	4	3	3½	3	1½	2¼		60	40	50	90	40	65
14.	P. 10	5	4	4½	3	2	2½	Feeble contraction, free bleeding.	38	4	21	50	36	43
15.	P. 12	12	8	10	8½	2	5¼		40	28	34	80	20	50
16.	P. 16	8	5	6½	8	2	5		45	38	41½	90	38	64
17.	P. 11	5	3	4	3	1	2		60	45	52½	90	36	63
18.	P. 20	7	4	5½	4	1½	2¾		60	30	45	65	22	43½
19.	P. 10	5	3	4	3½	½	2		60	38	49	80	40	60
20.	P. 12	11	5	8	10	3	6½		50	30	40	72	30	51
21.	P. 14	6	4	5	4½	2	3¼		46	30	38	68	38	53
22.	P. 20	3	1½	2¼	2	½	1¼		68	50	59	80	60	70
23.	P. 10	5	3	4	4	2	3		50	38	44	80	37	58½
24.	P. 10	7	4	5½	7	1	4		60	45	52½	80	38	59
25.	P. 8	10	1	5½	8	1	4½		60	18	39	60	26	43
26.	P. 8	7	5	6	6	1	3½		38	22	30	56	40	48
27.	P. 14	2½	2	2¼	3	1½	2¼		38	24	31	72	30	51
28.	P. 20	5	3	4	6	1½	3¾		48	22	35	78	22	50
29.	P. 12½	12	7	9½	10	1	5½		30	12	21	90	18	54
30.	P. 24	6	3½	4¾	4	1	2½		63	40	51½	72	42	57
31.	P. 11	12	6	9	11	1½	6¼		30	18	24	60	22	41
32.	P. 12	7	4	5½	4½	1	2¾		40	29	34½	68	38	53

33.	P.	13	10	6	8	10	1	5½		30	12	21	60	16	38
34.	P.	8	7	3	5	5	1	3		28	16	22	90	28	59
35.	P.	15	11	5	8	7	1	¼		38	18	28	68	20	44
36.	P.	6	12	8	10	10	2	6		36	12	24	90	12	51
37.	P.	8	15	8	11½	10	2	6		48	10	29	68	15	41½
38.	P.	12	7	4	5½	3	½	1¾		48	20	34	80	38	59
39.	P.	9	6	2½	4¼	6	1	3½		50	18	34	100	18	59
40.	M.	12	3½	3	3¼	3	½	1¾		40	38	39	68	40	54
41.	M.	12	5	2	3½	4	1	2½		48	18	33	62	38	50
42.	M.	12	4½	3	3¾	3	½	1¾		55	18	36½	90	22	56
43.	M.	5	10	6	8	11	1	6		38	12	25	90	18	54
44.	M.	7	6	4	5	4	1	2½		58	22	40	86	26	56
45.	M.	10	5	3½	4¼	5	1	3		36	20	28	68	27	47½
46.	M.	22	3	2½	2¾	2	½	1¼		60	38	49	112	49	80½
47.	M.	12	5	3	4	3½	¾	2⅛		58	24	41	80	33	56½
48.	M.	12	7	4	5½	5	1½	3¼		48	12	30	84	18	51
49.	M.	10	11	3½	7¼	11	2	6½		36	18	27	88	21	54½
50.	M.	10	7	4	5½	5	1	3		66	24	45	78	38	58
51.	M.	14	8	5	6½	7½	1	4¼		58	20	39	60	18	39
52.	M.	9	5½	2	3¾	3½	1	2¼		43	22	32½	60	26	43
53.	M.	20	5	2	3½	5	1	3		50	36	43	70	36	53
54.	M.	24	12	5	8½	10	1	5½	Feeble contraction....	48	10	29	90	12	51
55.	M.	18	3	2½	2¾	3	1	2		50	28	39	96	36	66
56.	M.	9	6	3	4½	5½	1	3¼		40	18	29	102	17	59½
57.	M.	12	10	5	7½	8	3	5½		28	12	20	64	10	37
58.	M.	8	8	3	5½	9	1½	5¼		40	22	31	72	28	50
59.	M.	16	3½	3	3¼	3	½	1¾		48	12	30	96	17	56½
60.	M.	16	4	3½	3¾	3½	1	2¼	Uterus contracted feebly; slight excess of bleeding.	42	28	35	67	38	52½
61.	M.	21	10	4	7	12	1½	6¾		60	48	54	80	58	69
62.	M.	14	8	5	6½	8	2	5		80	18	49	86	17	51½
63.	M.	12	4	3½	3¾	3¼	½	1⅞		58	30	44	79	36	57½
64.	M.	5	5	3	4	4	1½	2¾		48	36	42	67	41	54
65.	M.	7	10	5	7½	9	2	5½		40	26	33	76	23	49½
66.	M.	10	6	5	5½	6	1½	3¾		60	22	41	68	16	42

67.	M.	11	10	3	6½	8	2	5		58	28	43	90	32	61
68.	M.	4	12	3	7½	10	1½	5¾		58	16	37	60	18	39
69.	M.	3	4	2	3	4	1	2½		64	30	47	92	26	59
70.	M.	8	10	2	6	8	1	4½		56	20	38	63	22	42½
71.	M.	8	5	3½	4¼	4	2	3		52	12	32	78	16	47
72.	M.	7	8	2	5	6	1	3½		52	30	41	80	32	56
73.	M.	6	14	2½	8¼	11	1	6		60	16	38	76	12	44
74.	M.	9	5	3	4	5	1½	3¼		58	21	39½	60	24	42
75.	M.	12	4	3½	3¾	3	1½	2¼		40	32	36	56	32	44
76.	M.	6	6	2½	4¼	5	1½	3¼		34	28	31	94	26	60
77.	M.	8½	7	3	5	6	2	4		70	35	52½	99	33	66
78.	M.	8	10	2½	6¼	9	1	5		63	18	40½	92	15	53½
79.	M.	10	5	2	3½	5	1	3		56	43	49½	84	38	61
80.	M.	5	7	4	5½	5	1½	3¼		70	38	54	88	44	66
81.	M.	7	7	3½	5¼	7	1	4		58	12	35	60	17	38½
82.	M.	9	5	2	3½	5	1	3		68	22	45	68	28	48
83.	M.	8	5	2	3½	4½	1	2¾		72	38	55	80	26	53
84.	M.	9	4	2½	3¼	3½	1	2¼		70	16	43	70	23	46½
85.	M.	12	10	4	7	11	2	6½		56	18	37	66	16	41
86.	M.	14	8	1	4½	10	3	6½		58	32	45	58	24	41
87.	M.	10	10	3	6½	6	2	4		58	18	38	60	24	42
88.	M.	6	8	2½	5¼	8	1½	4¾		46	20	33	48	18	33
89.	M.	6	5	2	3½	4½	2	3¼		50	36	43	58	46	52
90.	M.	8	15	4½	9¾	15	1	8	Inertia, forceps necessary to terminate labor.	62	30	46	60	30	45
91.	M.	9	7	2½	4¾	10	2	6		80	25	52½	130	25	77½
92.	M.	8	7	3	5	5½	1½	3½		56	18	37	52	33	42½
93.	M.	12	5	2	3½	4	1	2½		80	46	63	72	21	46½
94.	M.	5	3	2	2½	5	3	4		55	50	52½	71	50	60½
95.	M.	7	10	5	7½	10	2½	6¼		40	12	26	58	16	37
96.	M.	7	8	2	5	8	1	4½		58	20	38	76	28	52
97.	M.	3	5	2½	3¾	3	1	2		58	40	39	80	50	65
98.	M.	8	6	1	3½	6	1	3½		55	24	39½	60	32	46
99.	M.	8	6	2½	4¼	5	2	3½		45	18	31½	70	22	46
100.	M.	3	4	2	3	3	1	2		60	40	50	80	47	63½

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EDITORIAL.

THE PRESENT STATUS OF HOMŒOPATHS AND ECLECTICS.

Just about one hundred years ago a German physician, named Samuel Hahnemann, entered upon a series of experiments in the action of drugs, as most of our readers know, which induced him about a decade later to propound a system of medical therapeutics absolutely opposed, in its exclusiveness and essential dogmatism, to the experience of the preceding ages of medical thought and to the prevailing belief of medical authorities of his own time.

Intense was the prejudice against this new medical sect at its inception and equally intense is it today. Homœopaths are not only not considered physicians at all, from the standpoint of the regular practitioner, but they are looked upon as fools, as knaves, as traitors and as charlatans. If they practice homœopathy honestly, *i. e.*, separately and consistently, they are fools; if they do not stick closely and exclusively to the tenets of Hahnemann, they are knaves; they are traitors because they claim to be physicians and yet are not with us; they are charlatans because they profess as true that which is manifestly false and thus obtain money by appealing to the superstitious credulity of laymen. This is the inherited opinion regarding homœopaths, put succinctly into words, maintained almost by the entire profession for very nearly eighty years. So far as we might, we have persecuted, abused and contemned

them. And they have, as was to be expected, thriven under this treatment, have increased and developed marvelously and have retaliated by making converts, to our detriment, of large numbers of our patients. More than this they have attended and graduated at our colleges, have thoroughly mastered all our science, both medical and surgical, and have then gone forth as homœopaths and asked in what were they inferior to us. The question is a hard one to answer. We can merely say that the difference—an immense one—lies in the fact that they profess error while we teach truth. Unfortunately, this answer is not so convincing today as it used to be. What is truth? And are we so sure we have it ourselves—that eternal truth which is unchangeable and demands the homage of all? The crowning heresy of the homœopaths is the foundation of their theory and practice, the principle *similia similibus curantur*; their next important error is their belief in the efficacy of attenuated solutions. We will not discuss the consistency of our ancestors in their contempt and execration of homœopaths but let us consider for a few moments our own position, in the light of present accepted or at least permitted theories, and to what extent the latter differ, in essence and in their opposition to what we formerly fondly cherished as fixed principles, from the tenets of homœopathy.

As strange and radical departures, in what do our present theories of antitoxines and of animal extracts differ from the foundation principle of Hahnemann? Does any man doubt that, if fifty, aye, or twenty years ago any physician had asserted as a new discovery that an extract of a pig's testicle or ovary would cure orchitis or ovaritis respectively or would restore the functional activity of these organs, he would have been universally proclaimed as a lunatic or a lying "quack"? And in what do the attenuated solutions of Hahnemann differ from our present theories of serum toxines? No, it is hardly consistent to attack homœopaths upon either of those theories.

But Hahnemann proclaimed one law as an essential truth which was utterly false and which, if believed in and adhered to, would of necessity have caused his theories and practice to die with himself. Like most enthusiasts he was unwilling to admit that he had discovered a partial truth. He insisted that he had solved the whole theory of medical practice for all time. He forgot to realize that it is not allotted to any man or to any generation to discover all truth. If one man carry, as the work of his lifetime, a single tiny fragment of truth into the store-house of science, he has made his name famous for ages, has become a benefactor of his race and has accomplished more than

millions of his generation. But Hahnemann forgot that, until we know the secret of life, science must be progressive. The dicta of today are the absurdities of tomorrow and the beliefs of one generation are the illusions of the next. He thought he had "burned his bridges behind him" but his disciples were wiser than he and while accepting his theories they refused, for the greater part, to accept the exclusiveness of these. This is how we must explain the anomaly that so many so-called homœopaths use at times our drugs and our methods of prescribing. This practice has frequently been referred to as dishonest but we must not forget that this position is not of their own choosing. We have forced them to choose absolutely between homœopathy and ourselves. Yet they, while believing that there is truth in homœopathy, have also realized that it is not of universal application; hence they have combined and practiced both.

We have no sympathy with homœopathy as a so-called scientific theory but we confess that our science has profited much from the work of Hahnemann and his disciples. There is a difference in degree only and not in kind between the minute doses of many drugs, as we prescribe them today, and the solutions of Hahnemann.

As we were in the midst of this editorial we received an advance proof of an editorial in the *American Journal of Surgery and Gynæcology*. It is impossible to give it entire nor have we room for more than the following excerpt which among others in the same vein are, by a curious co-incidence, very apposite to the thoughts we ourselves have herein expressed:

> It is probably true that the doctors are themselves greatly to blame. The way in which members of the "regular" (!)—God save the mark!—profession have vilified and abused their "homœopathic" and "eclectic" brethren in the past and the spirited manner in which these practitioners have repelled the attacks, have had much to do with the fall in public opinion. The time is ripe for the burying of sectarianism in medicine. If the progressive, honest, far-seeing members of the American Medical Association will open and freely pass a resolution which shall allow all affiliating bodies to accept for membership graduates of reputable homœopathic and eclectic schools, who do not use the term "homœopath" or "eclectic" to trade upon, who are simply known as "physicians" and practice as they please (as do we all), and allow consultation with such practitioners, the problem of obliteration will soon solve itself; and one of the chief obstacles to proper medical legislation will have been removed.

The entire editorial is excellent and we heartily congratulate the *Journal* upon its boldness in bringing this subject before the profession and in speaking most ably an unpalatable truth.

While heartily agreeing with it in the main, we do not believe in the wisdom of the American Medical Association undertaking so radical a

measure and with so little authority. This Association, while containing many physicians and many eminent ones in its membership, does not in any sense represent the whole profession or even a majority of it. Any action it may take on any subject is, therefore, merely a personal one. We sincerely hope that the Association will adopt recommendations and that many other Associations will follow its example, but we believe that so radical a measure as the one contemplated must be universal and therefore of slow growth. If it be forced upon an unwilling profession it will bring forth discord and disunion greater than any which have hitherto divided us. But what we most need is union and co-operation and the strength and influence which must follow therefrom. Let us make some effort towards unity among ourselves before we unite the homœopaths to us. Let us *agree* to admit them before we discuss how we shall admit them. But of one thing we are convinced: From the moment that homœopaths are admitted into our medical societies, from that moment homœopathy will cease to exist.

What has been said of homœopaths applies with even greater force to "Eclectics." If they have been educated in our colleges and received a degree therefrom, there can be little difference in their methods of prescribing and our own. If they drop their appellation, which has no distinctive meaning anyway, the only difference between us and them is their tendency to rather indelicate advertising, which arises not from their peculiar tenets, but from their freedom from ethical restraint.

We do not believe the time has yet come to "break down barriers," but we do believe that we should seriously consider the inconsistency of our position towards these sects and prepare ourselves for the remedy.

CORRESPONDENCE.

Adherent Placenta.

To the Editor of the American Gynæcological and Obstetrical Journal:

SIR: Kindly allow me space to report the following interesting case: At 2:30 on the morning of Dec. 17, 1897, I was called to see a young woman 19 years of age, primipara. Patient in good health, well developed. She was then in labor-pains strong and regular. I delivered her of a small child, at 6:30, without any trouble, the position being normal and delivery easy. After an effort to stimulate uterine

contractions by manipulation through the abdominal wall for over an hour had failed I tried assisting expulsion of the placenta by gentle traction on the cord, also without success. I waited an hour and then tried again; failing in this, there was no alternative but to remove it by manual assistance.

Under strict antiseptic precautions, with the left hand the cord was made moderately tense and the right hand passed up to the site of the placenta, which was found to be markedly adherent to the posterior uterine wall and nowhere detached.

I then placed the left hand over the abdominal wall to keep the uterus in place, and by these means attempted to promote contractions of the uterus, which responded sluggishly with slight separation.

Using the ulnar border of the right hand as a saw I managed to separate the placenta all around its attachment until complete separation took place. During the operation the hæmorrhage was severe and the patient required constant stimulating to avoid collapse. The placenta was well developed and weighed twenty ounces. The uterus contracted and the patient did well.

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OUR BERLIN LETTER.

(From Our Special Correspondent.)

THE BERLIN CLINICS—AMERICANS PREPONDERATE OVER ALL OTHER FOREIGNERS—LARGE AMOUNT OF CLINICAL MATERIAL—PHLEGMATIC GERMAN HOSPITAL "MODELS"—DR. MARTIN'S CLINIC, HIS ENERGY AND DEXTERITY—PHYSICAL TRAINING AND ENDURANCE OF HIS ASSISTANTS AND NURSES—TREATMENT OF HOSPITAL INTERNES IN BERLIN AND NEW YORK COMPARED.

BERLIN, February 17, 1898.

The fever of excitement caused by the announcement of the Schenck discovery in regard to sex genesis has ended by crisis. Everyone has had his say to the extent of his credulity, and after all variety of opinions have been expressed the subject has been dropped almost as suddenly as it was raised a few weeks ago. It is not discussed now at all, save perhaps occasionally over mugs of beer by students in the cafés.

The abatement in the excitement is not due to a lack of interest in the subject but rather to a dearth of information regarding it. Dr. Schenck has proven himself a diplomat as far as being interviewed is concerned. He has been very courteous to everybody and at the same time has said very little concerning his discovery. News comes from Vienna that his house is still crowded with ignorant but wealthy people, demanding to be treated so that they will beget boys. He says he will not treat anyone, no matter what fees they proffer him, until after he has reported his experiments to the medical societies to which he belongs. This, he says, will not occur until next December, so that interest in the subject will probably flag until that time.

A rumor has it that a professor here has begun to experiment in the same line, on his own account and after his own ideas. Rumor does not locate him nor mention his name. The most likely person, to my mind, to undertake such work is Professor Hertwig, director of the Anatomico-Biological Institute of the University. He seemed to think there was something in Dr. Schenck's theory, as he had seen efforts to influence the sex of embryonic animals prove successful.

Aside from this, everything has resumed again the even tenor of its way. The clinics are all very well attended, in fact some of them are crowded with students. Never before in the history of the university has the matriculation been so large. The students hail from all quarters of globe. America, next to Germany, has the largest representation.

These Americans can be seen everywhere, in all the clinics, in all departments. But the specialty in which they are most interested is gynæcology. It is appalling the number of would-be gynæcologists there are here—a small army being trained to ransack the feminine world. If each of these men expects to go back to his portion of America and do half the number of operations a week that are done by a professor here in that time, and if each year sees the same ratio of increase in the number of gynæcological students, the time is not far distant when there will not be a woman left in America with a pair of ovaries. Surely, woman nowadays cannot complain that she is not well taken care of and much thought of. Whereas in other days knights of the lance fought for the honor of defending her from outward foes, nowadays knights of the lancet are competing with one another for the glory of saving her from inward foes—from the captivity of her own organs.

Many of the American students have come directly here from their native towns and cities, without ever having stopped more than a day or so in any of our large medical centers, such as New York, Boston

or Philadelphia. They had been touched by the fever to "go to Europe" to see surgery and they either did not know or would not admit that most excellent surgery is done in America at the present day. They are charmed with what they see here and when they return perhaps they will spread the contagion of a foreign trip to their confrères. Never having been in New York, they do not know how classically some men operate there. I have seen operations done in New York that went far ahead, in point of classical beauty, of anything I have seen here. Then again I have seen men of some reputation in New York do botch-work which a third assistant here could not do if he tried, blindfolded.

In America we have the best and the worst and they are side by side. In Germany the grading is more even. Only the best achieve prominence; there are no pretenders in the foremost ranks; a botch-work surgeon never gets an opportunity to exhibit his work, even if he gets a chance to do any.

Beside the quality of the operating, the quantity of it dazzles the American student. It is marvellous the amount of operating that is done here every day. To an analytical observer, it would seem as though half, yea, three-fourths of the women of Germany have something wrong with their sexual organs.

Then the arrangements and facilities for instruction are very satisfactory. The classes are divided into small sections and thus each student is brought into personal contact with both instructor and patient. Physical diagnosis is most thoroughly taught. A student has all the opportunity he needs to make as many physical examinations as he cares to. He not only examines diseased women but normal women as well, so that he may learn the shades of difference. The German women are rather stoical in regard to being examined. I have seen a patient with a tender swollen ovary examined by fifteen students in succession for the space of an hour, without a protest. Imagine this in America!

But New York is fast coming up in regard to the quantity of gynæcological material it has constantly on hand. When the New Woman's Hospital is built, I doubt not but that it soon will have more material on hand at one time than any one clinic here in Berlin.

Of the professors here it may be said that they are all good. As I have said, there is not a poor one among them, although as is natural some are more popular than others. Of course I know more about the teachers of gynæcology and obstetrics than about the others. Of these probably Martin and Mackenrodt are the most popular.

That Martin is a "hustler" is an opinion I hear constantly expressed. I will not say how many operations he has done in one morning, for fear it will be taken for a typographical error. Suffice it to say he is an indefatigable worker, and his spectators say that his work is well done.

There is always a big crowd at Dr. Martin's clinic. Here in the operating room of his private sanitorium another one could not possibly be crowded in. And the faces are not those of transient visitors or curiosity seekers—they are all constant and daily attendants at these surgical séances—all members of Dr. Martin's class; and out of justice to them none others are ever admitted.

Dr. Martin has many peculiarities in operating, which I hope to describe at length in some future paper. In diagnosis, he stands without a peer that I have ever seen. And yet he does not claim that he can palpate a normal appendix. His brilliancy lies in his fine estimation of pathological conditions. He does not say "There is a tumor there" and leave it to the knife to determine what kind. He invariably makes a full and complete diagnosis before operation and the knife generally confirms it.

And yet in his examinations he does not maul a woman to death. He claims this is not necessary; a light touch being better for obtaining an accurate knowledge of the conditions present. His own touch is light and gentle, to such an extent that many women, after an examination by him, exclaim: "Ist das alles?"—having expected that they would be tortured, as they no doubt had been before.

It is a great desideratum to a high-strung, nervous woman to have a surgeon examine her without inflicting agony to her nerves and terror to her mind. And there are a great many high-strung, nervous women in Germany, the popular American opinion to the contrary notwithstanding. It is true, among the lower classes, the peasants, the laborers, the shop-keepers and the like, the women are generally dull, stupid, and phlegmatic and will permit any amount of handling without a murmur. It is from this class that the material for students' examinations are recruited.

But to return from this digression, one would not suppose, to glance at Dr. Martin's hands and note their size, that he could be particularly light-handed. Nor would one think that his fat fingers could be very nicely sensitive to touch. Nor that a man of his size and weight could be quick as lightning with scalpel or scissors. But such is the case. And now that I think of it, I have known very fat men who were quite agile when it came to a dance or a boxing

bout. So that Dr. Martin's bigness may be to his advantage after all. Preëminently is this the case in the matter of endurance. There is a mine of endurance contained in that size. Dr. Martin frequently exhausts his assistants and nurses before he is through operating, although he, as the operator, is doing the exhausting work. I have seen him go to work again in the afternoon, with a new batch of assistants, after a long tiresome siege in the morning, and work until dusk. And after it all he will appear as fresh and vigorous as though he had been resting; and perhaps he will attend a medical meeting in the evening and make a speech or, perchance, attend the opera.

Perhaps two traits may help to explain this wonderful endurance: Dr. Martin never worries about anything and he does things very easily. The first quality is largely the result of his complete and perfect confidence in his assistants and nurses. And the second is his own natural aptitude.

When I was interne in the Woman's Hospital in New York I thought the work very heavy and exhausting. And that I was not wrong in my estimation was evinced by the fact that nearly every house surgeon became sick before his term of service was ended. The number and frequency of the operations kept the house staff on the continual jump, and the routine work of ward visiting, chemical analysis, history writing, etc., had to be done at night, so that it is no wonder the internes collapsed.

But arduous as the work in the Woman's Hospital was, it was nothing compared to the volume of operating done here. And yet the internes do not collapse. The secret of the difference lies in the system, the arrangement of duties and the habits of living.

Every arrangement in a German hospital is the quintessence of system. It is so with the duties of the internes. They have certain regular intervals of "off-duty," during which time they are recreating. It is generally admitted, I believe, that recreation is a potent tonic. It has long been known here and it is getting to be known in America.

Then the daily habits of life are all important to the maintenance of a high standard of health. In the first place one has to eat well in order to do good work. And to eat well one has to have nice food, unless he be a manual laborer, when anything "goes." In the second place he has to exercise to keep his bodily functions in good working order. And by exercise is meant daily systematic muscle-work.

The German is very fond of developing his muscles. Most of the young men in Germany are athletic. Else they would not have such a profusion of "gymnasia" and "turnvereins." So it is not surprising

that each hospital has its gymnasium for the use of its internes—sometimes only a small room fitted up with chest machines, pulley weights, Indian clubs, dumb-bells and the like.

In such a room every morning, the internes assemble and work for, say, half an hour. They then repair to the bath room and take a cold plunge and a brisk rub down with coarse towels. At times, to vary the performance, a boxing bout or a fencing match is indulged in or a game at hand-ball and, in summer, tennis.

As to food, it is sufficient to say there is always variety and abundance on a German table. An American has to get used to eating marmalade and drinking beer for breakfast, but they go well after a little. A "course" dinner is a daily custom and of course wine is served with dinner and supper—a German would not eat a dinner without soup and wine. And instead of fifteen minutes for dinner, an hour or more is consumed. Thus it is the average German looks ruddy and stout and retains control of his nerves.

As I think of it there are two hospitals in New York City that pay a little attention to the welfare of their internes. One is the New York Hospital and the other the Presbyterian. At the New York Hospital the board is very good but exercise is not provided nor indulged in to any extent. It used to be the custom for the house staff to congregate every morning in the large bath-room connected with their quarters (they were quartered on the third floor of the commodious mansion directly back of the hospital, fronting on Sixteenth street) and one or two would put up dumb-bells and swing Indian clubs while the others immersed themselves, one after another, in a tub of cold water.

At the Presbyterian Hospital I know nothing of the meals but they have a few tennis courts in the yard, which are well patronized in summer.

In this sanitorium (Dr. Martin's) the bathing and gymnastics are not confined to the house-staff. Every nurse is required to bathe every morning and go through a certain amount of gymnastics and calisthenics as well. As no nurse is allowed to enter a training school unless she is physically sound and strong, she thus remains so and does the most efficient work.

Perhaps, in no small measure, to this system of healthiness and cleanliness is due the extremely low rate of mortality recorded in Dr. Martin's operative work. And in this connection it might be said that each nurse has a vacation during her menstrual period.

Speaking of nurses reminds me of the vast difference between the nurses here and in New York. A nurse here is a nurse and not an

amateur physician. In other words she is not taught a quantity and variety of useless information that should be known only to the physician. She is not taught the theory and practice of medicine, surgery, obstetrics, gynæcology, etc., etc., so that she acquires a smattering of everything and a perfect knowledge of nothing and becomes a critic of the physician who employs her and a menace to the life of the patient. But she is trained in the practical art of nursing, thoroughly grounded in the methods of caring for and helping the sick and, like the men in the army, is taught to take and execute orders promptly to the letter and without question. She knows how to do things. She can wash a bladder or a stomach, give a douche or an injection correctly, change a bed without moving the patient, etc., etc. But she cannot name for you the bones of the body, nor tell the chemical analysis of the gastric juice; nor why opium is constipating. These things do not belong to her sphere. She is the physician's helpmate, not his rival.

Speaking of the education of the nurse leads me to the subject of the education of the physician. The time is coming when Germany will recognize an American degree but it is not yet. American physicians here are not looked upon as doctors but as students. One cannot practice in this country without first passing the German State examination, and there is small chance of passing that if one has only an American degree.

VICTOR NEESEN.

On Pus Statistics.

WASHINGTON, D. C., March 16, 1898.

To the Editor of the American Gynæcological and Obstetrical Journal:

SIR: My friend, Dr. I. S. Stone, seems to have rushed unnecessarily into print apparently to publish a lot of his statistics which I do not question in my Philadelphia paper. Indeed I depend upon their accuracy.

It seems that an error crept into my manuscript, which did him no harm whatever, when I stated that he had done "150 abdominal operations for pus." His reprint referred to did report "150 cœliotomies" at the bottom of the first page, and it did use the following words on the same page: "In one series of 25 cases of large pelvic abscesses, in which the pus sacs were carefully although radically extirpated, a mortality of 25 per cent. resulted." Dr. Stone says in his criticism of my paper on page 322 of the March number of your JOURNAL: "The

cases where a 25 per cent. mortality was obtained consisted of "Twenty cases of Pelvic Abscesses" reported in *The St. Louis Medical Review*, while I was yet a novice in this difficult work." My only point in referring to his and other papers was to mention the high mortality, following the abdominal method of operating, in his class of cases, and I said, in the kindest spirit, in regard to Dr. Stone's operations, that his 25 per cent. of deaths occurred "in his first series of cases, which included a number of large pelvic abscesses in feeble patients." I had no desire nor thought of doing him any injustice and, by his own admission, I have not. It is quite true that he makes frequent reports of most of his cases and, as his reprints are public property, I am surprised that he takes offense at their being quoted. Of course they should be quoted correctly, and they were quoted correctly as far as this mortality was concerned; of his other statistics I had nothing to say in the paper he criticises.

The error made by me was immaterial—as this mortality referred to he admits and apologizes for, and I did not intimate that the same death rate extended through his other reports. As an illustration of the fact, however, that to err is human, I draw attention to Dr. Stone's reprint in which he says "in one series of 25 *cases* of large pelvic abscesses, etc., a mortality of 25 per cent. resulted," and in his criticism of my paper in your JOURNAL, he says of the same series of operations, "the cases where a 25 per cent. mortality was obtained consisted of *twenty cases* of pelvic abscess reported in *The St. Louis Medical Review*, while I was yet a novice in this difficult work." Of course a difference of five cases does not amount to much, but it suggests the possibility of similar discrepancies in his other collections of statistics.

The chief point of my paper was to emphasize the fact that the mortality of the radical abdominal operation in the class of cases above referred to was so high that it ought to be abandoned in favor of the modern vaginal incision and gauze drainage, which has scarcely any mortality at all. I deprecate all controversies of this kind and hope the opportunity I have unintentionally afforded Dr. Stone to draw public attention to his unusually favorable later statistics, will atone for my slight error in attributing to him a larger number of pus operations that he had actually performed.

JOSEPH TABER JOHNSON.

926 Farragut Square.

REVIEW.

Cystitis and Urine Infection. By DR. MAX MELCHOIR, Lecturer at the University of Copenhagen, Chief of Laboratory and Surgeon to the Royal Fredericks-Hospital. Published by S. Karger, Berlin. *German Edition.*

This work which was originally published in Danish in 1893, was translated into French in 1895 and now appears in German in a revised and somewhat abridged form with due consideration of the advances made in this field during the past few years.

To quote the opinion of Guyon, "It is the most important contribution, from the triple point of view, clinical, experimental and critical, that has been brought forward upon the question of urinary infection, since its origin." The work furthermore received the Godard Prize at the Académie des Sciences. Though further commendation is hardly necessary it may be added that the book offers most valuable and complete references to the literature, with critical reviews of the more important contributions, and that altogether it is an indispensable addition to the library of the surgeon who would be informed upon the most advanced and scientific views upon the subject.

The work is based upon the exhaustive study of 46 cases, with numerous bacteriological and experimental investigations. Some of his conclusions may be briefly stated. The presence of micro-organisms is necessary for the development of a cystitis excepting in those rare cases in which the inflammation is set up by chemical agents. As a rule the urine of cystitis presents a pure culture of a single species of germs; that most frequently found is the bacterium coli commune. With the exception of the proteus Hauser, the microbe alone cannot set up a cystitis; some exciting cause, most frequently retention or trauma, must first render the organ susceptible. In cystitis the urine invariably contains pus corpuscles though in varying quantity; the existence of a catarrhal cystitis is doubted. Even non-pyogenic micro-organisms may cause the appearance of pus in the bladder. Ammoniuria is in most instances a phenomenon of secondary importance which may or may not appear during the course of a cystitis. Most cystities are acid. A true gonorrhœal cystitis may occur, caused by the gono-

coccus of Neisser. The preventive treatment of cystitis demands not only rigid asepsis of the urethral orifice but also thorough irrigation of the urethra itself with a solution of boric acid. In the local treatment of cystitis the remedy par excellence is nitrate of silver.

Though further commendation is hardly necessary, it may be added that the book offers most valuable and complete references to the literature upon the subject, with critical reviews of the more important contributions, and that altogether it is an indispensable addition to the library of the surgeon who would be informed upon the most advanced and scientific views upon cystitis and urinary infection.

(W. T. K.)

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, February 3, 1898.

The *President*, CHARLES P. NOBLE, M.D., in the Chair.

Pregnancy and Labor complicated by Anterior Fixation of the Uterus.

BY GEORGE M. BOYD, M.D.

(See page 437.)

DISCUSSION.

Dr. E. E. MONTGOMERY: Unfortunately, I did not enter the room in time to hear the presentation of the case; only the latter part of the paper was heard. I have had opportunity to do quite a number of operations of this character. I have not had reports of adverse results in subsequent pregnancies. I know of three pregnancies having occurred subsequent to the performance of the operation, without the patient experiencing any difficulty in the labor. I have been called in consultation on but one patient on which an operation had been done. In this case the fixation was purposely a strong one, as the operator informed me subsequently, owing to the fact that the woman was suffering from procidentia. In her case the labor had been very much complicated, the os was situated high up, the fœtus presented in the transverse position; whether the fixation was responsible for this, of course I could not positively say. An arm had presented and been cut off. When I saw her the fœtus was pretty well doubled up in the pelvis, so that I had no hesitancy in taking such measures as would deliver the fœtus most readily and with least difficulty to the mother. I applied a cranioclast to the spine of the child and broke it in two, delivered the lower extremities and subsequently the trunk and head. The woman recovered without any subsequent difficulty. I have seen two patients who had experienced some discomfort and distress in subsequent labors. In one patient, which Dr. Krusen will recall, the patient was suffering from more or less abdominal discomfort, but in that case we could not say how much was due to the fixation or to having been knocked down and run over by a bicycle a few days before. It was

thought that she would abort or miscarry, but we were able to get her to the hospital, where the symptoms apparently subsided. This is all the experience of this character that I have had in which I have had an opportunity of seeing the complications of labor after ventrofixation.

Dr. STUBBS: I have performed this operation a few times and had experience of subsequent labor in two cases. I operated on one patient; she became pregnant and aborted three months after. I did not attend her, but my brother, who did, attributed it to fixation. I have operated on another case; she is now pregnant, and I do not anticipate any trouble.

Dr. W. E. PARKE: The two experiences that I recall most distinctly proved very disastrous ones. I was in attendance on the first case from the beginning, and after the woman was in labor for thirty-six hours and little or no progress was made, a consultation was held and it was decided that she should have an operation. She was removed to the hospital, where Cæsarean section—the Porro operation—was performed by Dr. Noble. She unfortunately had been infected before she was removed to the hospital, and died subsequently of infection. The second case of this character was not seen by me until she had been in labor seventy-two hours. She had been attended in the first place by a midwife, then by a physician who abandoned the case, and later by a second physician, with whom I saw her. The doctor in attendance had made various endeavors to remove the fœtus, but had not succeeded. After giving her ether we succeeded with great difficulty in delivering a dead fœtus. This patient was also infected and died a few days later. Both these patients had the difficulties usually arising in cases of this kind—that is, the anterior wall of the uterus was very much thickened, and so offered an obstruction to the labor.

Dr. KRUSEN: In the case Dr. Montgomery referred to the labor was terminated normally. The patient was delivered about a year ago, became pregnant since and miscarried at two months. In one or two cases coming under my observation the women have been very uncomfortable during the first three or four months of gestation; later pregnancy seems to be more comfortable. I would like to hear from the members their views as to the discomfort occasioned their patients during early months of pregnancy.

Dr. L. J. HAMMOND: I would like to ask in regard to the cases Dr. Parke has spoken of, whether an autopsy was made, and if so, whether there was any particular change in the uterine muscle. Dr. Boyd refers to cases as likely to have some difficulty in dilatation of

the cervix. I think our experience is that when filled with the product of conception the cervix uteri dilates in spite of obstruction, and therefore I believe some muscular change must have taken place to bring about a condition necessitating mechanical dilatation.

Dr. PARKE: In neither of these cases was an autopsy made.

Dr. W. S. STEWART: I would like to ask Dr. Boyd if in the dilating of the cervix he used applications of any kind, such as we used in times past—such as extract of belladonna, which is applied to the cervix so as to relax and cause dilatation more readily to be accomplished.

Dr. NOBLE: My own experience of labor complicated by ventrofixation has embraced several cases. I saw one of those referred to by Dr. Parke, and it was impossible to dilate the cervix sufficiently to get your hand and arm up above a shelf, which was formed by the imprisoned anterior wall of the uterus. That constituted a tumor, and above it was a shelf on which the fœtus rested. While you could feel the body or legs, it was impossible to get the hand above it to grasp the fœtal parts. Dr. Parish saw that case also. The only way would have been by splitting the anterior wall sufficiently high up to overcome the obstruction. That is the only alternative to Cæsarean section. In another case I thought I would be compelled to do a section, but with patience and persistence I was able to pass the obstruction and get the feet of the child and deliver, the result being a dead baby. Where the uterus is firmly fixed and cervix pulled up into the abdomen, the natural way for labor to take place would be through the lumbar region.

The last case I attended I induced premature labor, but the woman had absolutely no pains, the uterus did not contract at all; the cervix did not dilate. It was necessary to dilate it with the Barnes' bags and with the hand, and in consequence of a tedious delivery the baby was lost. I feel I have nothing further to recommend in the conduct of these labors except that my own judgment is it is wise to induce labor if we find six weeks before term that the cervix is drawn up into the abdominal cavity, because otherwise I feel that quite a number will have to be delivered by Cæsarean section.

Dr. G. M. BOYD: In reply to Dr. Stewart, I would say that we use no local application to the cervix for the purpose of bringing about dilatation. This new, or somewhat new, cause of dystocia, looking at it from an obstetrical standpoint, will increase the number of our operative cases, and the means of detecting labor so complicated seems to me of a great deal of importance. It seems to me that the wisest course is to allow the patient to go to term, and if the obstruction is not ex-

ceedingly great to perform a cervical incision, a free incision. This has been suggested by Dührsen. Other reports of this operation have been very successful, and the hæmorrhage from the extensive incision surprisingly small. If the obstruction is exceedingly great, and where we are only with great difficulty able to reach the presenting part, then I believe the Cæsarean section is the best operation.

A Study of the Action of Quinine in One Hundred Cases of Labor.

By L. J. Hammond, M.D.

(See page 468.)

Discussion.

Dr. G. M. Boyd: I enjoyed Dr. Hammond's paper very much. This subject was discussed during Dr. Montgomery's presidency by a paper that Dr. Hare presented and, if I remember rightly, from a number of letters that he sent out to various physicians, the concensus of opinion was in the negative as to the value of the use of quinine during labor. Some of the text-books speak of it as an old-time treatment that now is considered of no value. Other text-books mention it with favor. Dr. Albert H. Smith and Dr. Fordyce Barker, in 1871, read papers upon the value of quinine in pregnancy, and from that time it has been, I believe, very generally used in Philadelphia and New York, with very favorable reports. In the institution that I am connected with the late Dr. Albert H. Smith used this treatment successfully, and it may possibly be because of my association with the institution and following up some of its old customs that my belief in quinine has been developed. I believe that it does increase the strength of the labor pains and the frequency, and I believe that it increases the frequency and the strength of the labor pains, acting as a general tonic, knowing as we do that it is probably the best of our drugs for that purpose. I feel quite sure that I have seen positive effect from its administration, and I believe that the effect that it produces is one, acting as it does as a general tonic.

Dr. W. S. Stewart: I would like to ask one question of the reader of the paper. I think he deserves a great deal of credit for the painstaking and thorough work he has done. I would like to know in cases of cinchonism what the results have been after administering quinine; that is, if the patients' heads are easily affected? It is seldom we can get a female to take as much as thirty grains (within the period he refers) who is not seriously affected by it. It has been my experi-

ence that much less than thirty grains would be more than sufficient to affect the head, and the consequence is generally very annoying and distressing symptoms.

Dr. L. J. HAMMOND: In regard to Dr. Boyd's statement, I would like to say that I started into this investigation as a sceptic. I had very little, if any, faith in regard to quinine in stimulating uterine contraction. In fact, I had no faith in it until I began to make up my report, and I could not go back on figures. It seems to me to be of value in that class of cases in which I have made these observations. In cases in which there seems to be a general atonic condition, in these cases I think it does the abdominal muscles as much good as the uterine; indeed, the entire muscular system shows in the benefits.

As to cinchonism: the uterus has contracted normally and the getting up has been normal, so that I have not had any untoward experience reported to me by the patient.

Removal of Urethral Caruncle; Curettement; Amputation of Posterior Lip; Hysteropexy; Nephropexy of Right and Removal of Cyst of Left Kidney.

Dr. E. E. MONTGOMERY: One patient, at one sitting, of Newtown, Pa., who underwent operation in my sanatorium, October 14, 1897, gave a history of being 47 years of age, and had two children, but had never been well since the birth of the last child, nineteen years ago. Menstruation was regular, the last period rather prolonged. She had noticed for a number of years a tumor situated a little above the umbilicus, which was very movable. The patient was extremely thin and presented a dark grayish color of the skin She complained of obstinate constipation, attended with marked pain in the evacuation of the bowels. Upon examination it was found that the tumor, which was freely movable in the abdomen, could be pushed up to the left side under the ribs and was recognized to be the left kidney. It was considerably larger than normal. On examination the right kidney was found to be quite movable, extending downward below the crest of the ilium. The uterus was retroflexed, more or less fixed. The patient in addition to the difficulty in evacuation of the bowels, suffered from frequent attacks of nausea and vomiting. The lower end of the cervix was abraded, thickened, and the posterior lip very much enlarged. A caruncle projected from the orifice of the urethra.

The patient underwent operation, the uterus was first dilated, curetted, packed with gauze, the posterior lip of the cervix amputated,

the caruncle removed from the urethra; the abdomen opened, adhesions broken up, the uterus brought forward and fastened to the anterior abdominal wall by through and through sutures, using for this purpose the figure-of-eight stitch, which crossed external to the aponeurosis of the muscle. The fundus of the uterus was previously sacrificed. This was done with a view of making a firm adhesion between the fundus of the uterus and the anterior abdominal wall. No objections could be presented against this union, for the reason that she had reached an age when it was improbable that she was ever likely to again become pregnant. The right lumbar region was opened by a vertical incision, alongside the lumbo-sacral muscle, the capsule denuded on the surface of the right kidney, and this fastened by three sutures; the wound closed, using silkworm-gut sutures for drainage. The left lumbar region was opened in a similar manner, the left kidney, which was floating, pushed up into the wound, and at its inferior end a sac was found, containing fluid. This sac was considerably larger than a hen's egg, its wall was lined with calcareous material. On examination the ureter was found adherent to its side. This was carefully separated and then the sac excised, opening pretty well up against, but not into the pelvis of the kidney. The raw kidney surface was sutured with fine silk, the wound below packed with iodoform gauze, leaving the major portion of the wound open; gauze was packed all around the kidney.

The patient stood the operation well. In separating this sac it ruptured and its contents flowed over the surface, coming in contact with both the other wounds. These were carefully cleansed, but notwithstanding the cleansing, infection occurred and a stitch abscess resulted in the abdominal wound, and another in the wound for the right kidney. After finding the condition of the second kidney, that is, the left kidney, so changed, I regretted very much that I had disturbed the right, as the injury of both kidneys rendered it possible that the subsequent renal irritation might be so serious as to interfere with processes of elimination. For a few days the urine was quite high colored and contained considerable ablumin. Under the use, however, of water in good quantity, and attention to the condition of the bowels, the patient experienced no special inconvenience. She was able to return home at the end of four weeks from the time the operation was done, with the abdominal wound completely healed, the wound of the left kidney almost closed, and with the right closed, with the exception of a sinus from which a drop or two of pus discharged. The infection in the right wound resulted without question in infection of the deep

sutures, so they subsequently had to be removed. The patient gained rapidly in health and in her general appearance. She was seen in the latter part of January, when she had evidently gained some 15 or 20 pounds, looked in excellent condition, fresh, bright; complained, however, still of considerable constipation and the discharge at times of considerable glairy mucus from the anus. Upon examination it was found the urine contained a small amount of albumin, and on microscopical examination there was squamous epithelium from the vulva and bladder. Some free red and white blood corpuscles. Numerous casts containing epithelium, leucocytes and red blood corpuscles.

After the operation, which was done at 12:30 on the 14th, she voided three ounces of urine at eleven P. M. Was intensely nauseated. Nausea continued. On the 15th 13 ounces, on the 16th 18 ounces, on the 17th 26 ounces. Still nauseated, able to retain but very little nourishment. On the 18th 18 ounces, on the 19th 19 ounces; nausea ceased. On the 20th 16 ounces, on the 21st 18 ounces. At this time the quantity of urine increased. Maximum temperature 101.6° on the 22d. Returned to her home on the 8th day of November, twenty-four days after the operation.

A proper criticism upon this case in view of the condition found, would be that the operation upon the right kidney should have been omitted. The left kidney was so markedly displaced that it was reasonable to suppose that any radical changes would be more likely to be found in it than in the right, and it would have been better, consequently, to have operated upon it alone. I question, indeed, whether it is wise in any case to interfere with both kidneys at the same operation.

It is rare, in my experience, after any operation for fixation of the kidney, that there is not some indication of renal irritation, with the presence of albumin, possibly blood corpuscles in the urine. This irritation affecting both kidneys might very readily lead, especially in a patient in whom there was some pre-existing kidney irritation, to failure to carry on the functions of the organs, and the consequent death of the patient. It is quite tempting in a patient who has been suffering for a length of time, whose circumstances are such that she cannot afford a repetition of operations, to do all that is necessary at the one sitting. This was what led me to perform the operation upon both kidneys, although I am free to say that had I operated upon the left first, I should not have disturbed the right. The left kidney operation is one a little out of the usual order, in that the kidney structure was invaded, involving the removal of at least one-third of the kidney

and union of the remaining surfaces by suture. The result has certainly demonstrated that such surgery is justifiable and it is better the patient should have the remaining portion of the kidney, than it would have been to have removed the one kidney, throwing all the work upon the other organ.

We cannot claim the patient as cured, inasmuch as there is albumin in the urine and the presence of casts and blood corpuscles, but the gain of flesh, strength and general appearance affords a hope that this is also temporary.

DISCUSSION.

Dr. L. J. HAMMOND: I would like to ask Dr. Montgomery if he undertook before the operation to learn by examining the urine from the ureters separately whether there was disease in one more than in the other kidney, and also whether it would be possible at this stage to learn by an examination of the ureters which of the two was more diseased, as he says there is still some disease. As evidenced by the presence of albumin, it would, I think, be instructive to know whether the kidney that was found at the operation to be most at fault, was at the present time the origin of the albumin now present.

Dr. E. E. MONTGOMERY: The urine was examined carefully prior to the performance of the operation, and there was at that time no indication of disease of either kidney, so far as urine examined; so there was no special indication to examine urine drawn from ureter. Of course it would be perfectly possible to draw urine from each ureter to determine which kidney was at fault in production of the albumin and whether one was more involved than the other.

The Puerperium complicated by Typhoid Fever.

BY WILLIAM E. PARKE, M.D.

(See page 449.)

DISCUSSION.

Dr. E. E. MONTGOMERY: This is an exceedingly important report and demonstrates still further the difficulties which environ the physician in the study and treatment of his cases. It is exceedingly important to determine the presence of infection, to determine the source of infection, or whether it is some intercurrent affection as described

in this case. The occurrence of elevation of temperature, however, was late in the course of the convalescence and the fact that the lochial discharge was not offensive, that the digital examination of the uterine cavity disclosed the absence of any decomposing material, would seem to me to contra-indicate the advisability of any operation so severe as curettage, for the reason that at the period named, if it is due to septic infection, the germs after penetrating through the uterine mucous membrane have entered the blood, so that it is impossible by any local manipulation to remove the source of poison. Such a case would illustrate the importance of examination of discharges, with a view of determining either by the microscopical examination or by cultures the existence of infection or by Widal's test, to arrive at a determination as to the presence of typhoid fever. Of course if we can demonstrate that typhoid fever exists it will save much time and aid materially in treatment.

Dr. BOYD: Typhoid fever is considered a serious complication to pregnancy and labor and I believe it is a fortunate thing in Dr. Parke's case that the typhoid developed late. If it develops early the labor is premature and the woman usually dies. I remember one case which gave me a great deal of thought; the patient had some fever when she fell in labor and immediately with her delivery a high temperature and a course very similar to that of rapid septic infection ensued. There was no tenderness over the uterus nor was the lochia infected, but the other symptoms were those resembling very much infection. She developed later the spots of typhoid fever, and, in my belief that the case was not septic, I made some inquiry in regard to her history, and found that where she was living, before she entered the hospital, the house was in very bad condition, and at that time I found her husband had typhoid fever. I remember also Dr. Parish saw the case with me and confirmed the diagnosis. The patient went from bad to worse and died in ten days or two weeks after delivery.

Dr. J. M. FISHER: "An honest confession is good for the soul." After listening to this paper of Dr. Parke's, I wish to confess to having seen a patient about a week ago in whom I made a diagnosis of puerperal infection that I now believe to be a case of typhoid. Fever set in on the 7th or 8th day, preceded by a chill. Upon making an explorations of the interior of the uterus there was no offensive discharge of any evidence of retained material, and I did not consider it necessary to do a curettement. I washed out the uterus and told the doctor that he had a case of streptococcus blood infection, and that the patient, if recovery was possible, would no doubt be sick for a number of weeks.

Upon reflection after hearing this paper, I honestly think that she is suffering from typhoid fever. I shall see the patient tomorrow and look for spots, etc.

Dr. PARKE: I think the points Dr. Montgomery brings out are well taken, and they are really the ones that led me to question the diagnosis in the case. I, too, felt that she was not septic, but gave her the benefit of treatment for sepsis in the absence of a positive diagnosis. I have looked hastily over the Index Medicus for four years, and in all that time found only one case recorded.

Conservative Surgical Treatment of Uterine Fibroids.

BY WILMER KRUSEN, M.D.

(See page 460.)

DISCUSSION.

Dr. MONTGOMERY: I think the Society is very greatly indebted to Dr. Krusen for the excellent presentation of so important a subject. I have been very much impressed with the slight amount of hæmorrhage in the removal of these growths. The removal of fibroids is usually considered one of the serious operations, particularly where we proceed to removal of the uterus. Hæmorrhage is a matter which we regard with considerable anxiety, the vessels which enter the uterus are large, principally the result of increased nutrition conveyed to these great growths and for this reason I had expected that the hæmorrhage would be a marked symptom, but on the contrary the vessels are easily controlled by means of a hæmostat, so that it is not a factor of so serious importance as it would seem. There is one exception I will take to the technique which the doctor has given, and that is the necessity for the previous currettement of the uterus. I do not believe this is a wise precaution to take. The researches of Krönig and Menge have demonstrated the fact that the uterine cavity does not in ordinary conditions, and very rarely indeed, contain infectious germs; that the uterine cavity has the power of ridding itself of these germs even when they are carried into the uterus, and injuries have taken place. The introduction of the curette and scraping the surface affords an opportunity for entrance of germs and renders the soil exceedingly favorable for it. If the cavity of the uterus is not packed with gauze to prevent accumulation of blood within it the latter affords a

favorable culture material for germs. If you introduce gauze into the cavity of the uterus you will find in feeling over the organ that you will be in doubt whether the mass is not a fibroid growth. Operating upon a woman recently who had had hæmorrhage I packed with gauze, opened the womb and removed three fibroid growths within the wall. After completing my work I felt a tumor. I split open the uterus and much to my disgust found the mass I felt was merely the gauze. I examined carefully and found there was no fibroid in the wall. I sutured the uterus with catgut and fortunately have had no unpleasant result from it. The patient has recovered without temperature exceeding 100.2°, yet I did an operation unnecessary as a result of having packed this uterus with gauze, so that I consider this part of the operation is apt to be misleading.

Dr. J. M. FISHER: There is one point of interest in connection with this subject to which reference has not been made in the paper, and that is the influence that the removal of a certain number of these tumors has upon any remaining growths in the uterine wall. In my own case referred to, there were quite a number of small nodules left in the uterine wall that could not be removed. If an attempt had been made to enucleate them all it would have been necessary to sacrifice almost the entire uterus, and it was my desire to leave as much of the organ as possible. A recent examination disclosed that the uterus was about normal in size and did not present any nodules. I therefore came to the conclusion that all the remaining fibroids present at the time of the operation had atrophied or disappeared altogether. It is a matter of medical history that quite large fibroids have disappeared altogether following mere exploratory operations without removing any of the pelvic structures. Possibly this is due to some reflex nervous change. I think it is well to remember in connection with these cases that so-called fibroids of the uterus are not fibroid tumors at all, but that they consist of commingling aggregations of encapsulated fibrous and muscular structure; the capsule being incised, the tumor is readily enucleated and the hæmorrhage easily controlled. I must take exception to what Dr. Montgomery has said in regard to the absence of infectious germs in the uterine cavity. In case of fibroid disease of the uterus we know that in a large proportion of these cases there is a diseased condition not only of the walls of the uterus, but likewise of the ovaries and tubes, as well as of the lining membrane forming the cavity of the uterus. The irritation these tumors give rise to is apt to produce a favorable soil for the growth of micro-organisms and pathogenic germs are found in the cervix almost constantly in an at-

tenuated form, which may become active under favorable conditions. I think the proper thing to do is to attend to the cavity of the uterus first, especially where you have reason to suppose that this may be invaded during the operation through the abdomen.

Dr. F. C. HAMMOND: From an obstetrical standpoint this operation has been opposed. Where several fibroids have been removed from the same incision, which necessitates tunnelling of the uterine wall, these operators claim, and it must be from theoretical grounds, that, these cases having become pregnant, untoward symptoms should be looked for during gestation or labor. In addition to the tables tabulated by Krusen in his paper, it would be well to review those of Sutton and Giles in London. These men, having done myomectomy and removed as high as thirty and forty fibroids from one case, and removing as many as fifteen to sixteen growths through the same incision, thus necessarily tunnelling the uterine wall, and if anything would make it weak this would, have watched these cases through gestation and found no untoward symptoms and have attended these women through labor, which has terminated satisfactorily, as they report. I think this is an important point. Of course we should look toward the future as well as the present results of an operation, and the men who are opposing myomectomy in view of the future are doing so from the theoretical instead of the practical side of the question.

Dr. L. J. HAMMOND: I would like to mention a case I operated on some six or eight months ago, partly from the fact that I erred in my diagnosis, also because of the fact that it contained so many extramural fibroid nodules. When I made the incision I expected to find some disease in the right tube and ovary, but instead I found a pedunculated fibroid, which rose from the fundus of the uterus and dropped down to the rgiht side practically in the position of the tube. There were three of the growths removed, the woman made an uninterrupted recovery and has had no bad symptoms since. The indications for the operation were the intense pain she suffered, I presume from the pressure of this growth on the tube.

Dr. C. P. NOBLE: The question of myomectomy is one in which I have been interested for some years. The first operations done for fibroids were myomectomies and done as far back as in the forties. All of Atlee's early operations were myomectomies and as we all know he was working at this subject as early as forty-three. The first abdominal myomectomy was done in 1853; you will find it reported in Atlee's Prize Essay on Operations for Fibroid Tumors. In that case the tumor was sessile and subserous, and not an intramural. Most of the

myomectomies done by Atlee were done through the vagina, but I think it is of interest historically that myomectomies were done for many years in this country, in fact, it was the original operation. Most of the operations done by Emmet for years were myomectomies and done largely through the vagina. I make mention of this historical matter because Dr. Krusen very properly ascribed the modern operation of myomectomy to Martin, but it was only right to go back to Atlee, who preceded Martin and was the pioneer. The age of the patient must be taken into consideration in every case. Of course there is nothing to be gained in a woman who has about reached the menopause, in doing myomectomy, providing in that case hysterectomy would be a simpler operation. We must weigh the respective advantages of myomectomy or hysterectomy, taking into consideration the nature of the case. It so happens that this winter only one case has come to me in any way suitable for myomectomy, and she was a woman 36 years of age. The tumor, however, proved to be intraligamentous in its development. In order to remove it, it was necessary to do a very difficult hysterectomy. About one-fifth of the operations I have performed have been myomectomies, quite a number have been done from the vagina and the remainder from the abdomen. I have not so far removed the large number of tumors that we read about, that is ten or fifteen tumors from one uterus. Unless the patient were herself extremely desirous to retain her uterus, and there were very good reasons from the standpoint of child-bearing, it seems prudent to limit the operation to those having a lesser number. If a patient has fifteen or twenty fibroids I feel myself it is wiser to take out the uterus. Patients having intramural submucous fibroids I find it quite feasible to split the uterus, to get them out from below. I do not remember the number of fibroids I have removed in this way, but it is quite considerable, and all made good recoveries. There was little hæmorrhage, so little that it was suprising to me. I split the uterus entirely up to or beyond the internal os, pulled one lip forward, the other backward; then catching hold of the tumor with bullet forceps you could work it loose and get it out. Some of the tumors have been so large that I have had to split them to get them down. Quite a number of the women have had children since.

As to curretting, I must say in all these cases I have operated on I have preceded the abdominal myomectomy by curretting. The theoretical points to the contrary, notwithstanding, it seems to me wiser to use the curette and depend upon careful disinfection of the vagina to prevent subsequent infection of the endometrium.

Dr. E. E. MONTGOMERY: As the President's remarks upon the large number of fibroids seem rather to reflect upon the case reported, I would say the women was 40 years old and had 13 fibroids; she was unmarried and exceedingly anxious to retain her uterus, and as the growths were not very large, it was deemed wiser to remove them and not sacrifice the uterus. I have never had a patient who has gone through a more satisfactory convalescence subsequent to operation, and this was the case in which five of the fibroids were removed from the abdominal cavity.

Dr. WILMER KRUSEN: In defence of the method of currettement there are two reasons I would advance; first, for the purposes of procuring perfect asepsis; the other reason is that, so often after enucleation we return to the pelvic cavity a very large uterus. We have frequently associated endometritis and a fungoid uterus; by removing this we place the uterus in the most favorable condition.

Another criticism on my own paper I would make is that of Dr. Fisher's case, in which he left several nodules in the uterus. I had a case in which Battey's operation was done. It increased preceptibly in size and necessitated hysterectomy afterwards. If you leave the ovary and tubes in, as you always should, there is a possibility of tumor developing later. I have had no experience with pregnancy following.

In regard to the history of myomectomy: I referred purely to abdominal myomectomy, which was suggested, if not originated, by Martin, of Berlin, where premature menopause would be attended by very marked alterations. The average age was 31. None of them have borne twins, I believe.

Official Transactions.

FRANK W. TALLEY, Secretary.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, February 8, 1898.

The *President*, W. GILL WYLIE, M.D., in the Chair.

A New Four-Branch Uterine Dilator.

Dr. A. H. GOELET: This four-branch uterine dilator has been devised because the ordinary two-branch instrument often fails to dilate the os sufficiently to admit the finger. The four-branch dilators which have heretofore been presented have been most unsatisfactory. This one has proven very satisfactory. It is intended to be used after preliminary dilatation has been accomplished with the two-branch dilator. The mechanism of this instrument is rather novel. I think I have at last succeeded in producing an instrument which will meet every requirement for a uterine dilator.

DISCUSSION.

Dr. J. A. IRWIN, a guest of the Society, said: I think there is a very great need for a stronger dilator than any now on the market. I have in use several dilators of different patterns, and yet I met with a case not long ago in which none of them was strong enough to dilate a cervix, toughened by a repaired laceration. In regard to the instrument just shown, the handles are not as strong as some of the older patterns. It has also the objection of being difficult to clean, and would be better if it were made so that it could be taken apart.

Large Submucous Fibroid.

Dr. GOELET: In response to the request of the President, I have brought down this specimen of degenerated submucous fibroid, which I removed with the uterus about nine months ago from a patient 29 years of age. Menstruation was normal until four years ago, when it increased in amount and lasted for eight or nine days. For a year previous to consulting me she had not menstruated, but had a profuse

and persistent hydrorrhœa. The tumor attained its present large size during the year prior to operation. The patient's health was greatly deteriorated and she was very feeble. When the abdomen was opened, the uterus strongly resembled a pregnant uterus. It was at first thought that the tumor could be shelled out and the uterus preserved, but on incising the uterine wall, which was soft and spongy in places, the degenerated condition of the mass within presented a most forbidding prospect for a conservative operation, and I therefore did a suprapubic amputation. I prefer to leave the cervix when it is healthy and when there is no strong reason for removing it. The left ovary being diseased was removed; that on the right was preserved in order that subsequent nervous symptoms might be avoided. The patient made an uneventful recovery and has entirely regained her health and strength. No nervous symptoms have yet been complained of.

Small Uterine Fibroids.

Dr. BROTHERS: These very small fibroids were removed from a patient without removing the uterus and without opening the abdomen. The patient was sent to the hospital with a diagnosis of stones in the bladder. She was somewhat difficult to examine, but several small bodies could be felt anterior to the uterus. This, together with the vesical irritation which was present, gave rise to the diagnosis. In order to satisfy myself that there was nothing in the bladder, the patient was anæsthetized, the urethra dilated, and the finger introduced into the bladder. It was found that the small bodies were tumors on the anterior uterine wall. I opened the anterior vaginal fornix, displaced the bladder, drew down the fundus, and removed these tumors and three others which were lost, there being five in all. One of them was found attached to the broad ligament, while the other four were on the anterior surface of the uterus near the fundus. As far as could be determined by the finger, there were no others present. I then did a vaginal fixation of the uterus and closed the wound without drainage. The patient made a good recovery from the operation and went home in three weeks. The bladder symptoms, however, were not relieved, although they were supposed to be caused by the presence of the tumors. Since the operation the patient has been subjected to a series of cystoscopic examinations, which have revealed a red and inflamed area on the posterior wall of the upper part of the urethra. I am trying to cure this by local applications of silver nitrate.

In regard to this method of operating, the procedure is not an easy one by any means, for it is difficult to bring down the fundus

through the vaginal incision if the uterus is at all enlarged. In this case it was necessary to employ climbing sutures of silk in order to get the fundus down—a slow and tedious procedure which made the operation last two hours. The patient, however, stood it well.

Specimens of Fibroid Tumor.

Dr. W. GILL WYLIE: I have here several specimens of fibroid tumors, operated in the past two months, some removed by abdominal incision and others by the vaginal route, which illustrate well some of the various forms of degeneration to which these tumors are subject.

To-day the treatment of fibroid tumors is much more satisfactory than it was a few years ago. Twelve years ago these cases were operated upon only when the tumor threatened to kill the patient. Now-a-days when a woman discovers that she has a fibroid tumor, she wants to have it removed. Nor is a fibroid such a benign thing as we used to think it was, for we now know that at any time it may take on malignant or other degenerative changes which may make the condition a serious one. If a woman goes to a physician complaining of some serious symptoms, as a rule there is an indication for operation. In young women—under 35—if the fibroid is small and not giving her trouble, I let it alone. If it is large or if it gives rise to pain or hæmorrhage, and if the patient is over 35, the best thing to do is to take the tumor out while the patient is in a good condition, and it is also best to do a complete hysterectomy and not a partial one. I am convinced that it is wrong to leave the uterus in these cases, nor should part of an ovary or anything else be left. Twelve years ago I removed the appendages from a patient with a fibroid uterus. She was brought to me on a mattress and was in a wretched condition. She survived the operation, but it was a close shave. But that woman is not well to-day. Degenerative changes in the uterus set in and the result is that there is an acrid discharge from the organ which has produced an ulcerated condition of the vaginal and cervical tissues, which is so severe that adhesions have formed. At the present time if a young woman comes to me with a small fibroid causing no grave symptoms, perhaps excessive menstruation, I curette the uterus; otherwise I do the complete operation. I object to leaving the cervix because it often degenerates. I have in mind two cases from the same country town in which I did the old operation; *i. e.*, partial hysterectomy, and both patients have since died from malignant changes which took place in the cervix. I have other similar cases.

I will mention a few of the interesting points in connection with these specimens.

Case VIII. came to me eight years ago with a large fibroid. At that time I curetted her and cured her of hæmorrhage. But she suffered from melancholia and nervous trouble and came back to me. I found the uterus much enlarged. Hysterectomy was performed, and the specimen showed such a state of degeneration as would have caused local peritonitis soon. The patient's mental condition became normal after the operation. In this case the tumor began to grow after the menopause, and degeneration is especially apt to develop at this time. I have now under observation a patient with a fibroid who is 54 years of age and who is still bleeding. This shows the fallacy of believing that the menopause will have a good effect upon these cases.

Case IX. came to me three years ago and was about as weak as a patient could be. There was a large tumor in the uterine cavity, which had been bleeding to such an extent that the woman was extremely nervous and run down. I succeeded in extracting the tumor without removing the uterus, and the patient made a good recovery from the operation. Later, however, she returned to have the uterus removed, which I did by vaginal hysterectomy.

This very large tumor is interesting from the fact that one would hardly believe that it could exist in a woman and not cause pain, and yet such is the case. The woman from whom I removed it never suffered pain or any bad symptom. She came to me because her abdomen was getting large, but complained of nothing else. She wished to have the tumor removed, but said that one surgeon had refused to operate upon her because she had atheromatous arteries. I told her that I had operated upon several cases with such a condition of the arteries and that two of them had died suddenly, but she was willing to take the risk, so I operated. She stood it well. The specimen shows marked cystic degeneration and the tumor would have caused trouble by the bursting of some of these small thin-walled cysts.

The next specimen was removed from a woman of fifty, who suffered very severe pains, as if the tumor were about to be expelled. There was also continuous bleeding.

The next is very much the same, except that the tumor had not caused any peritonitis, but the patient suffered from an exaggerated form of nervous trouble with more or less melancholia.

This tumor was removed by the vagina some two or three years ago, and later the patient returned to have the uterus removed. She was 41 years of age and the wife of a country doctor. She had been

curetted and treated for years by a specialist without benefit. Operation was done without difficulty and the mental symptoms, which were pronounced, cleared up and the woman made a good recovery. The specimen shows a true type of myomata. The tumor occupied the whole uterus and caused marked changes in the structure of the organ.

These specimens here show well the cystic form of degeneration of the cervix.

This last is another tumor which existed for years without the patient being conscious of it—there was no hæmorrhage, although the general health had failed. This latter and the mental symptoms improved after the operation.

I have also noted the frequency with which fibroid tumors occur in sisters. I have had several cases in which this has occurred.

Discussion.

Dr. W. R. Pryor: The specimens which Dr. Wylie has shown are very interesting. He brings up the question of indication for operation and the different forms of degenerative changes which fibroid tumors take on. As indications for operation he gives the following: (1) Malignant or other degeneration; (2) hæmorrhage, and (3) pressure symptoms. The specimens indicate the necessity of removal in these various conditions, but the main point of the doctor's argument is this: He wishes to discuss the propriety of performing the radical operation in women over 35 years of age and of using less radical measures in women under that age.

The cases which seem to me of chief interest are those in which he has removed the uterus leaving a portion of the cervix, which later on degenerated into cancer, and those in which he removed per vaginam, the only tumor which apparently existed, yet the patients presenting themselves later with other tumors which necessitated a second operation.

Dr. Henry C. Coe: I did not see all the specimens, but I am much interested in this subject. During the last two years in doing hysterectomy I have been leaving the cervix unless some special indication, such as the necessity for free drainage, led me to remove it. This is not so much because the pelvic floor is weakened by removal of the entire uterus, as on account of the ease and rapidity with which amputation can be performed.

In regard to removal of the uterus in women over 35 years of age with growing fibroids, I quite agree with Dr. Wylie. One of the

specimens I understand was removed from a woman of 36, and, although there was no hæmorrhage and no pressure symptoms, the fibroid had undergone degeneration during the few months previous to its removal.

Dr. H. J. BOLDT: In the specimens the one feature upon which the interest centers, viz., the pathological report, is absent. This is the important point in considering the degeneration of tumors. We all recognize the fact that fibro-myomatous tumors may degenerate, but the nature of the degenerative process is what we ought to know if a specimen is presented. It has been the habit of a great many operators to designate as fibro-sarcoma those tumors in which operation has been followed by a fatal termination, although often they are simple fibro-mymomata. For this reason I think we should always determine by microscopical examination the nature of every tumor removed. Not long ago I operated upon what I thought was a fibromyomatous tumor, but microscopical examination showed it to be a sarcoma. I am of the opinion that true cancerous degeneration of a fibroid is the rarest form met with.

In regard to some tumors not causing any symptoms, we have all seen such cases. When they do not cause trouble and when we are satisfied that cystic degeneration has not taken place, they should be left alone until they begin to cause trouble. So far as degeneration of fibroid tumors subsequent to the menopause is concerned, I can hardly take the position which some take. In some of these cases cystic or malignant degeneration will take place and trouble follow. Malignant changes are rarely seen, comparatively speaking, softening and suppuration being more frequently met with.

As to indication for operation, I am opposed to operation unless symptoms are produced by the tumor. Removal is unnecessary unless the patient is suffering. As a rule I find that patients have a great dread of an operation and will not consent to it except when the tumor is causing trouble.

In regard to the method employed, I see but little difference between total extirpation and supravaginal amputation, as employed by the majority of American operators at the present time. I have employed both. In two instances I have seen a parametritis follow partial removal of the uterus, which has never occurred in my experience after *total* extirpation. In the latter operation about four ligatures are required, and about the same number are necessary in supravaginal amputation. The vaginal vault is left in a better condition when the small portion of cervix is left.

Dr. GOELET: I can corroborate what has been said about fibroid tumors occurring in sisters. I know of a family in which three sisters each had such a tumor. I have already operated upon two of them, doing ligation of the uterine arteries in one case and a hysterectomy in the other, but as the tumor is small in the third sister, and as it is not causing any symptoms, I have advised against operation at this time.

Dr. PRYOR: It seems to me that the presence of a tumor is not in itself an indication for operation. It is when a woman comes to us with distinct symptoms which are referable to the tumor, that we should consider the advisability of operation. I am generally guided by the presence or absence of symptoms such as hæmorrhage, pain, pressure, sepsis and indications that the tumor has grown to some important abdominal viscus. Hæmorrhage alone, unless excessive, is to me not necessarily an indication for operation, but pressure symptoms always require operation, for nothing else will relieve them. The presence in the abdomen of a mass reaching above the brim of the pelvis requires, I think, radical operation because of the necessary involvement of important abdominal viscera. These latter tumors have an adventitious blood supply and are apt to grow rapidly, and should the adherent intestine break down, the tumor becomes infected and the woman may die from acute infection. This is especially true of fibro-cystic growths.

When an intra-uterine growth produces hæmorrhage, I think that curettage or perhaps myomectomy does more good than anything else. When a woman is under 35 or the possibility of maternity is very dear to her, I am disposed to myomectomy, provided the necessary suturing does not endanger the general nutrition of the uterus. Women generally have more than one of these tumors. If you remove one through the vagina, you may be sure that there is another somewhere. I have never seen a case in which there was a single growth. Another minute one can be found by careful dissection.

If a man is going to take the position that all cases of fibroid require operation, I do not think that the preservation of the menstrual function is of much importance. In this line of surgery, the extraneous circumstances, the wishes of the patient, should govern the operator. As a rule it is best not to do a radical operation in a woman under 35 years of age. In such cases I prefer to do myomectomy.

Still, as all fibroids of small size can be removed per vaginam by sacrificing the uterus, I make it a rule to lay the various possibilities of the two operations, abdominal myomectomy with possible recurrence, and vaginal ablation without this, before my patient. No

matter what operation is done upon tumors not adherent to small intestines, there is little risk of life, either from the vaginal or abdominal operation.

Dr. WYLIE: The reason why I brought up this subject is because there still lurks in the mind of the gynæcologist that the menopause will stop the growth of these tumors and that, for this reason, they may be safely left. I wished to show that they are not so benign as many think, for the reason that they may at any time take on various degenerative changes which make them dangerous to life. I am satisfied that many women lose their lives because the medical attendant trusts to the menopause to relieve the symptoms. As a rule it is safe to say that the women who boast that they menstruate after the age of 50 have fibroids and degenerate ones at that. The question as to whether the existence of a tumor is a dangerous condition is often a difficult matter to determine. In many cases they may give rise to no symptoms for years.

Now, as to there being no microscopical examination of these specimens. My experience has been pretty large and I have had microscopical examinations made of many just like them, and the pathologist's reports have all been so similar that I have become tired of sending specimens to him for examination. If these were examined they would probably be shown to be pure fibroids. In some there is cystic degeneration. In many of these tumors there is more or less degeneration of the blood vessels, and these are the ones which degenerate rapidly. There are several kinds of tumor. In some the tissue of the uterus changes, and the uterine wall may become two or two and a half inches thick. In others the uterine walls remain nearly normal. Another point is this, when a fibroid enlarges the uterus it may produce a condition like subinvolution after labor or abortion and the resulting symptoms. There is apt to be a form of melancholia in such cases. These large uteri with an abundant vascular supply produce reflex symptoms. This is particularly true of small fibroids, which fill up the true pelvis—about the size of a two-months pregnant uterus, especially when complicated by a chronic endometietis.

I think this subject of degenerative changes of fibroid tumors is very important, and I wish that some of the younger men would make a study of these conditions, especially as to the varying pathological changes.

Foreign Bodies accidentally left in the Abdominal Cavity during the Course of Cœliotomics.

By Herman J. Boldt, M.D.

(See page 431.)

Discussion.

Dr. Coe: I have never been able to understand the spirit which prevents a man from freely acknowledging his mistakes. Surgeons who have at heart the interests of science should always be ready to admit their errors, for we learn more from these than from their successes.

Curiously enough on the day after responding to the reader's request to discuss his paper I was summoned to Bellevue Hospital to remove a gauze pad which had accidentally been left in the abdominal cavity of a patient in my service. (Specimen shown.) Theoretically, this should never happen, but that it does happen is well known. In regard to tapes being attached to pads and sponges in order that they may not be left behind, I have removed three sponges at autopsy in which the tapes were found wound around the intestines. It seems to me that the best way to avoid these unfortunate occurrences is to have the pads sterilized in packages of a dozen, and to carefully account for each dozen before another package is opened. In this way one can keep track of them. Some special system like this is necessary, otherwise in the hurry of an operation some one will get "rattled" and an error will be made. I would make it a rule never to introduce a small pad into the abdominal cavity. I employ large ones, about 6x8 inches. In the case in which the pad was overlooked in my service, the operation was an abdominal hysterectomy and two ovarian abscesses were encountered. This necessitated a separate set of instruments and much incidental confusion, and the result was that, although the pads were repeatedly counted by a reliable assistant nurse, one was overlooked. A rise of temperature and a mural abscess followed, and the convalescence was very slow. The pad was found four weeks after operation directly under the abdominal wound and this was probably the salvation of the patient. It being aseptic, no special harm was done. In those cases in which pads have ulcerated into the viscera, they must have been situated lower down. The results of this accident are better now than when sponges were employed, but, as I said at

the outset, it should not occur and I was very much mortified to find that one had occurred in my service.

Dr. JOSEPH D. BRYANT, a guest of the Society, said: I believe that one should have had some experience in matters which he intends to discuss, but, while it is true that I have performed many cœliotomies, it is also true that I have not yet been unfortunate enough to leave anything behind in the abdomen—or, if I did, I never knew it. I will say, however, that I never approach a case in which this operation is to be performed without much apprehension in regard to this very point—a degree of apprehension which I never experienced in any other operation which it has fallen to my lot to perform. I remember speaking, not long ago, of the uncertainty of putting trust in those upon whom we rely to do the counting of sponges in these cases. I was once operating upon an unusually bad case of appendicitis in which there was considerable pus in the abdominal cavity. I had removed the appendix, washed out the cavity, and had my finger resting upon a sponge which I had introduced. Having a little curiosity to know whether the nurse and house-surgeon were keeping track of the sponges, I told them to count up and see if they were all removed from the abdomen. This was done and they assured me that they had every one, whereupon I produced the one I had and asked them where *it* belonged. The nurse insisted that someone must have torn a sponge in two, but it was a clear case of oversight in those who were enjoined to keep count of the sponges used. It occurred in this way: After exposure of the appendix, which was a very badly decayed one (and I use the word "decayed" intentionally), accompanied by much pus, I myself caught up a sponge and introduced it without speaking of the matter. I had become, not "rattled," as Dr. Coe puts it, but so interested in my work that I neglected to call attention to the fact that I had introduced a sponge into the cavity, as is my usual custom. I think the surgeon himself should exercise a degree of supervision over this matter, and I make it a rule to call attention of those on duty to every sponge or pad which is introduced into a wound. Perhaps this is the reason why I have not met with this accident. I never use small sponges or pads in the abdominal cavity, and, moreover, for greater safety, I usually have a tape attached to each, to which is fastened a pair of forceps.

Dr. FREDERICK HOLME WIGGIN, (by invitation): The subject under discussion is one of great interest to the abdominal surgeon. My personal experience is limited to one case in which it was alleged that a piece of gauze had been left by me in the abdominal cavity. It is

true that a small piece of gauze about the size of an adult thumb was removed from the lower angle of the abdominal wound in which stitch infection and abscesses had occurred some months after the performance of the primary operation, but as the patient had been under the care of other surgeons who had frequently placed pieces of gauze in the wound after I had operated upon her, it is at least a question as to who was responsible for the accident, and whether or no the cause came from the abdominal cavity.

Another case which came to my notice was a patient operated upon by one of my colleagues at the city hospital about a year ago, who removed a large gauze pad from the abdominal cavity of a patient who had been previously operated upon at another hospital. She made a good recovery.

It seems to me that precautions should be employed to prevent such occurrences. The pads should be carefully counted by the nurse, as well as by the surgeon, and the latter should count them again as he introduces them into the wound, and recount them as he removes them. I have also found it to be a great help to have tapes attached to these pads, to the ends of which rotary clamps are fastened after the pads have been placed in position. In my experience it is not so much sudden hæmorrhage which causes these pads to be left in the abdominal cavity occasionally, as it is that the patient frequently takes the antiseptic agent badly and the surgeon's attention is thus diverted from his work. In extreme instances of this kind I have felt that I would be willing to take the chances of leaving a pad in the abdomen, in order to finish the operation speedily, even if it necessitated a re-opening of the wound later to look for it,—the point being always, first, to save the patient's life.

Dr. HOTCHKISS (by invitation): I am sorry to say that I have had some personal experience of this kind. About ten days ago I removed a pad which had been left in the abdominal cavity a week previously, although it was thought that a careful count had been kept. All went well for a week, when the patient developed temperature and pain in the right side of the abdomen. An incision near the original one was made and a small pad was removed, together with a quantity of pus. This has been my only recent experience. Several years ago my house surgeon removed a sponge which had been overlooked in a suppurative appendicities case and which done no harm except to delay the convalescence somewhat. It was removed a few days after the operation. The precautions mentioned in the paper are good. I think this accident is more liable to happen when there are many assistants.

Dr. GOELET: I have never had any such experience and have not been obliged to take any special precautions to guard against it, because I impress upon my mind the number of pads I use. In addition to this, I have a very reliable nurse who has been with me for a number of years, and it is part of her business to keep count of the number of pads used and to account for them afterward. On several occasions I have tested her and she has never failed. I consider myself fortunate in having such a good nurse and in being able to keep her so long. I think that if one particular person is held responsible for the pads, none will be left in the wound.

Dr. PRYOR: I do not want to brag, but since doing vaginal work I have never had the misfortune to leave any of my pads behind. I do not use small pads, but strips of gauze, and these are held by the assistant at the upper angle of the wound and are not in the least in the way. Such long strips cannot be lost. I think it is impossible to trust the counting of pads to anybody—the surgeon should see to this himself instead of transferring the responsibility to somebody else.

Dr. WYLIE: The only experience of this kind which I have had occurred about twelve years ago, when I operated out of town with the assistance of several country doctors. I took with me a certain number of sponges—more than we use now—and these were all accounted for. Were counted over three times and found correct. After the operation the woman developed the characteristic griping pains, like sudden uterine contractions, and died at the end of twenty-six hours. On autopsy three sponges were found in the abdomen, and how to account for these was a mystery until it was discovered that one of the country doctors, who assisted me, had brought with him three sponges and that he had, in the excitement, picked them up and used them during the operation, but forgot it when we counted our sponges.

I attribute my success in this respect to the fact that I make my operations as simple as possible. I use very few instruments and very few pads or sponges. When I was in Germany, I was impressed with the great number of instruments which were used and the many assistants, and I made up my mind that I would avoid this. Last Sunday I went to Holyoke, Massachusetts, and took with me one nurse and a very small bag containing a few instruments and one bottle of sponges, and yet I did five hysterectomies. I rarely use more than two small retractors and a certain number of forceps. Three sponges, one flat and two hand sponges, is our rule. The simplicity of the thing brings success, and I am satisfied that almost all operators use too

many instruments and have too many assistants, too many sponges, too many pads. One assistant is all that is necessary, and the smaller the number of sponges employed, the better. I never feel any anxiety on this score, even at Bellevue hospital, as my clinic is organized.

Dr. PRYOR: I would like to ask the members of the Society to inform me if they ever have a fatal result after vaginal hysterectomy. I would be glad to make an autopsy in any such case in order to ascertain whether there is any restoration of the patency of the arteries. I am making an investigation in regard to this matter; I am ready to come at any hour of the day or night for this purpose.

Official Transactions. LEROY BROUN, *Secretary.*

TRANSACTIONS OF THE WOMAN'S HOSPITAL SOCIETY.

Stated Meeting, January 18, 1898.

The President, PAUL F. MUNDÉ, M.D., in the Chair.

Fistula in Ano.

Dr. J. DOUGAL BISSELL: The case presented is one of fistula in ano, with a sinus leading to an abscess pocket. Strictly speaking, it is not a gynæcological case, but as it illustrates how certain pathological conditions in the female pelvis outside of the general tract may be confused with or mistaken for conditions arising in the genital organs, and in that we are called upon to relieve such conditions when complicating diseases peculiar to the female sex, I consider it of sufficient interest and profit to bring it before you.

Miss E., aged 23, was curetted by me two years ago, shortly after miscarriage at four months. She remained in health until the following year, when she had a second miscarriage. The contents of the uterus were not thoroughly expelled, and being in an adjoining state she sought relief there. The operation was not satisfactory. One month afterwards she came under my care. The symptoms of which she then complained were a dirty reddish discharge, extreme nervousness, with an indescribable and constant pressure in the head, pain in both sides of pelvis, especially in the right; digital examination very painful. Under

ether, the uterine cavity was found very large, and both appendages thickened and engorged. The uterine wall was so thin and rotten that the curette passed through into the peritoneal cavity almost without my being conscious of it, so little was resistance offered. The quantity of fungus material was removed and the uterine cavity packed with iodoform gauze, which was withdrawn within forty-eight hours. The condition found about appendages made me entertain the opinion that one, if not both, would in time have to be removed. The patient made a satisfactory recovery so far as the uterine condition was concerned, but the nervous symptoms and pain in pelvis continued. I advised tonics and sent her into the country for several months, but without benefit. She became more and more nervous, despondent and melancholy.

On her return to the city I made a digital examination and found that pressure about the post-fornix gave such pain as to prevent a satisfactory exploration of the pelvis and this extreme sensitiveness, connected with history already related, made me form the opinion that one or both tubes were diseased. Unfortunately, the examinations were made in the evening, and as the patient presented no rectal symptoms, the external parts were not observed. I advised posterior section and the condition to be dealt with as was necessary. Under ether, the appendages were found healthy, but further search revealed a little fistulous track half an inch below sphincter. The sphincter muscle then was stretched and track laid open, severing the muscle at the same time. Further exploration with probe showed that the fistula was but a continuation of a deep sinus. With patient in dorsal position and Sims' speculum in rectum, the entire diseased track from opening under sphincter to and around the base of sinus, was dissected away; the surface involved, being about an inch in depth, and two and a half, or more, inches in length, was brought together by a double layer of catgut sutures, and the sphincter muscle with two silkworm-gut sutures. Before operation the rectum was thoroughly cleansed and two large pledgets of cotton placed high up to prevent the wound from becoming contaminated by fæcal matter. When operation was completed these pledgets were removed and iodoform gauze was placed in rectum over wound to insure protection and cleanliness. The gauze was removed within twenty-four hours and the bowels made to move within thirty hours. The rectum was irrigated with boracic acid solution twice a day for the first few days, then once a day until sutures were removed. Primary union complete. Patient seen six weeks after operation, a well woman in every respect, and stated that she remembered

of occasionally feeling a slight discomfort about anus before operation, but not sufficient to call my attention to it.

It is evident to me that an abscess existed at the time of second curettage, but its outlet being in the rectum it escaped detection, and had it not shown itself in the form of a fistula in ano I believe I yet would be hunting for the real source of trouble. When tracks of this nature are laid open and left to heal by granulation, as is a common practice in surgery, the patient's recovery is both painful and tedious and often most unsatisfactory Weeks, if not months, of constant dressing is necessary, and when the parts have granulated there is a resulting cicatrix which may prove at any time to be a source of much discomfort. Primary union, I believe, should be attempted in such cases, and if it fails we are in no worse position than we would have been had we allowed the wound to remain open to granulate.

Discussion.

Dr. Paul F. Mundé: Are there any remarks on this case?

Dr. Bissell: If the gentlemen have met with fistula in ano, I would like to know how it is treated by them.

Dr. Mundé: It seems to me that we ought not to pass the subject. It is a well known fact that diseases of the rectum are often intimately associated with so-called genital symptoms.

Dr. Bissell: That is a point I want to get at.

Dr. Mundé: I have operated on many of these. I would not have thought of them if I had not been in the habit of looking for rectal lesions if I could not find a reason for the symptoms in the sexual organs.

Dr. E. E. Tull: The doctor did a very wise course in dissecting that out. I should always try to do it, if it seem possible. In this connection I would refer to ulcers of the rectum, if I may be permitted to speak in that line. I have taken considerable interest in them, and have succeeded in curing cases that have stood for years. One case had an open sore for three years, situated several inches up rectum. She had been treated locally every day for a year without benefit. It *was* about an inch long and three-quarters of an inch wide. The rectum had been scraped, curetted, and such and such things had been done. This case was put under an anaesthetic and the ulcer dissected out. A small knife was passed around the edges of the mucous membrane, freeing it. Bringing together edges with chromicized catgut, it healed readily. It left a little bit of an arch that simulated a structure,

but this gave no trouble, and she was permanently cured. She had many nervous symptoms that the doctor has spoken of. Rectal irritation causes symptoms very similar to uterine symptoms, therefore primary union is very desirable in this region.

Dr. GEO. C. FREEBORN: I would like to ask Dr. Mundé his method of operating. I used to slit up the fistula and allow it to granulate. When I was a student nobody thought of dissecting out a fistula, but I think the advance in surgery now is such that possibly they may be following in the footsteps of Dr. Bissell and cutting these things out. It is the most rational way.

Dr. BISSELL: I would say that the operation was first done in 1879 by Stephen Smith; Frederick Lang in 1885. Their methods in one or two particulars differed. At the present time, it is a common custom among surgeons to just lay the fistula and sinus track open. I had never seen anyone dissect out the entire track.

Dr. J. N. WEST: Doctor, did you not say you found the sinus opening into the rectum a certain distance up, and then proceeding to a point above that?

Dr. BISSELL: It came from the abscess, emptied into the rectum, and then burrowed underneath the sphincter and showed itself below in the form of a fistula.

Dr. WEST: I asked you, doctor, that question in order to understand the case thoroughly. I think that if the ordinary method had been pursued of simply slitting it into the rectum, you would not have cured that case; and the thorough manner in which you dissected out the wall of the sinus means that the patient will be thoroughly well, a great improvement over the old method.

Dr. BISSELL: It is to my mind the ideal method, and, as I say, even if it breaks down, it is not in any worse condition than if left to granulate.

Dr. MUNDÉ: The old method in all these cases of fistula in ano, was to slit the fistula right through the sphincter; there was simply a dressing in the old times of lint or cotton, and it is only within, I think, a very few years that the sharp curette has been employed to scrape out and destroy the hard base of the sinus or fistula, and only a few surgeons have employed this cutting out. I saw it done within a week by Dr. Gerster at Mt. Sinai. I quite accidentally found him instructing his class in cutting out a fistula in a male subject and then sewing up the wound from the bottom up with catgut sutures, which he did right through, and it was quite a long wound. I have opened and slit a great many of these, and they are very common in women,

and run into the vulva, into the rectum and into the posterior perinæum, and the perinæum, the labia and almost half the posterior vaginal wall may thus be honeycombed. I have seen such sinuses reach up between the rectum and the vagina to the depth of three or four inches. You cannot slit up all these sinuses and sew them together; it would leave things in a pretty uncomfortable condition for the patient. In these cases I have scraped them out as deeply as I could, sutured the walls, or packed them with gauze, as appeared best. I never thought there was anything particularly unusual about that; it seemed the natural thing to do. Still I do not believe it has been generally done in fistula in ano until within a few years.

Dr. WEST: Dr. Bissell's case and his treatment of it brings to mind a case which I saw in my clinic at the Woman's Hospital, which had been operated on at the Presbyterian Hospital. The sphincter had been cut in two or three different directions, and the wounds healed by granulation, so that it was utterly impossible to give the woman a sound sphincter, it had been cut into so many pieces. Dr. Bissell's dissecting out his sinus and closing up the sphincter at once, suggests the idea that if in this case it had been sewed up, the woman would have had a sphincter, whereas the rest of her life she will have the disagreeable experience of being without one.

Dr. MUNDÉ: Dr. Bissell, was not there any tenesmus in sewing up the sphincter? Of course, you know you usually dilate the sphincter first.

Dr. BISSELL: Yes.

Dr. MUNDÉ: You washed it out?

Dr. BISSELL: I gave a cathartic the second day, and irrigated the bowel.

Dr. MUNDÉ: You used none of the canulas that are usually employed after operations on the rectum?

Dr. BISSELL: I used a single catheter and let the water flow out through the rectum.

Dr. MUNDÉ: There is one point that has been touched upon by Dr. Tull, and that is ulceration of the rectum. It is not like Dr. Bissell's case, but it is a very interesting and important subject. I have had much experience with ulceration in the lower two-thirds of the rectum, in women, of course. I should like to hear if anybody has anything to say on this subject. The cases are not uncommon at all. Women will some to us complaining of discharges from the rectum; constipation is a usual thing, of course; overloading the lower part of the bowel, hard fæcal matter staying there for days, finally forced

out, perhaps helped by an enema. Often women have bloody stools, not exactly hemorrhages, but stools streaked with blood, and you examine the rectum with an ordinary glass cylindrical speculum; I do it in my office, and I usually can make a diagnosis. If I find the lower part of the rectum intensely red and highly congested, it is a simple catarrhal proctitis, bleeding freely on touch, with a sponge or cotton on a dressing forceps. In a more advanced stage the congestion of the lower part of the rectum is still more marked, and there may then be ulcers the size of a ten, twenty-five or fifty-cent piece, one or more. Usually I find only one, and that a large one. Such women complain dreadfully. They have no uterine symptoms at all, no other pelvic symptoms, but in the rectum. They complain of throbbing, burning, bearing down, bloody and painful stools, and they come to me as a gynæcologist, because they think they have something the matter with their sexual organs. I examine by the vagina, and find nothing; by the bladder and find nothing; but when the bloody stools are mentioned and the rectum is examined the cause of the symptoms is at once revealed. I have often seen pregnant women who had these symptoms. My method of treatment is the following: I have dilated under an anaesthetic the sphincter thoroughly and thus exposed the lower part of the rectum, and then I have inserted as large a glass cylindrical speculum as possible and touched all the ulcers, with nitric acid; or if there was only a catarrh, I have poured in a solution of nitrate of silver, one dram to one ounce, which whitens the inflamed surface, and after having thoroughly cleansed and dried it, I have put in a small long cotton tampon covered with vaseline, after having poured in a quantity of fluid vaseline. The object of the tampon is to keep the rectal walls from approximating for the time being. The patient is put to bed, and usually requires a morphine hypodermic, because the tenesmus is pretty severe. Then I have put these patients on fluid diet, containing as little milk as possible, and I have given them every hour one drop of liquid Dover's powder. They probably get anywhere from 12 to 16 drops, equal to 16 grains of Dover's powder during the 24 hours. If it was only a catarrhal proctitis, I have repeated this treatment on the third day, making a new application of nitrate of silver. Usually two or three such applications will cure the case. Then twice a week I have given such patients an ounce of castor oil by the mouth, which I have always found to be the most suitable laxative for chronic intestinal catarrhal affections. In the interval I have ordered every evening an enema of warm olive oil, two or three ounces or of carron oil (linseed oil and lime water, equal parts)

to be retained. The treatment will run two or three weeks, and after that in almost every such case, treated with proper diet, having the bowels moved twice a week with castor oil, and in the interval with soapsud and sweet oil enema, you will find the disease cured. The cases are not at all uncommon, and very annoying and obstinate unless properly and promptly handled.

Dr. MALLETT: Do you use anaesthesia or cocaine?

Dr. MUNDE: I would rather use general anaesthetia than cocaine, I have used cocaine to dilate the sphincter, and I had the woman make more noise than I care to have in my office.

The Treatment of Uterine Retroversion.

BY JAMES N. WEST, M.D.

(See page 440.)

DISCUSSION.

Dr. MUNDÉ: Gentlemen, the paper is before you for discussion.

Dr. GEORGE T. HARRISON: If Dr. West will pardon me, I would like the liberty of criticising in the first place his title. If he would say instead of retroversion, retrodisplacement, I think he would be nearer the mark. Most of the cases of retroversion that we are called upon to treat, are not retroversion; they are retroflexions. I agree with him entirely as to the value of the mechanical treatment; and the term he applies to some of our gynæcological colleagues is, I think, absolutely correct. I think the desire to operate is largely due to impatience, and the parallel he draws between orthopædic surgery and the treament of displacement I think is very àpropos indeed. He quotes from our president's experience, who has written a number of papers on that subject. Yet I think that with his extensive experience and observation he is too much of a pessimist in regard to the results that can be obtained by the use of pessaries. I attach very little importance to statistics, I do not think we have the data on which to build them, as a rule; because one man's data indicate one set of affairs, and another man's entirely different. But I am absolutely sure from my experience that such a statement that about 5 per cent. can be cured, by the use of pessaries, or 11 per cent. is absolutely misleading. I do not know how many I have cured that way, and I do not know anything

about statistics, but I simply know the impression produced on me that a very large proportion of cases can be cured by mechanical appliances. There is this great advantage that is gained by this method of treatment; when your patient is cured, she is restored to the condition in which she was before she became diseased; she is brought back to a normal standard. Whereas, in all these methods that are adopted to relieve this morbid condition by operative procedures, say what you will, you simply substitute one pathological condition, more or less, for another: or rather, that is not the proper way to put it; you do not bring the patient back exactly to her normal condition. One method of treatment that has come into vogue of late, the doctor did not mention, and that is vaginal fixation. This, according to a number of operators, has been attended by very excellent results. Now I would like to say, in regard to ventral fixation, that I think the apprehension he has about the firm adhesions is a mistake, for the simple reason that in the progress of time a distending process takes place at the point of fixation and you simply have made an additional ligament to hold the uterus forward. That is the result of the operation, and I do not think as a rule you have any bad symptoms referable to the operative procedure; this has been my experience at least.

In regard to the treatment of adhesions, his method of treatment is no doubt very valuable in a great many respects, but he leaves out, I think, one of the most important of all the measures we have at our command for the relief of that condition, and that is massage. That is the most admirable way to get rid of your exudates, provided they are not recent, and at the same time break up adhesions, by massaging and forcing the uterus forward. There is a very valuable procedure that was introduced by Schultze by which he shortens the method of treatment very much, and can be used in a great many of these cases; put your patient under chloroform or ether, and you can very often break up the adhesions and restore the uterus to its normal position at once by his method of the introduction of the finger into the rectum, and co-operated through the abdominal wall. You can estimate exactly the extent of the adhesions, their nature, and if they are not too extensive, you can at once break them up and restore the uterus to its normal position, and they put in your pessary.

Dr. FREEBORN: I would like to sound a note of warning in regard to one thing, and that is the forcible breaking up of adhesions under anæsthesia. I think I have spoken of this once before. Anybody who studied the histological structure of these adhesions, finds that they are not always fibrous. They are at times exceedingly vascular, and if

you go in there under anæsthesia and break down these adhesions, I think you do once in a while run your chance of getting up a pretty dangerous hæmorrhage, if you can judge from the size of the blood-vessels that I have found in some of these adhesions in microscopical study. I think when this method was first advocated, I was at the time interested in the study of these adhesions, and every chance that I could get hold of an adhesion I made a pretty thorough microscopic examination of it, and I found that a great many of them, especially where they had become quite old, contained a considerable number of large blood vessels, so that, in breaking these down you might run the danger of having a very dangerous hæmorrhage take place.

Dr. LEROY BROUN: For the same reason that Dr. Harrison feels his pessaries have been so useful to him, that is seeing his patients coming back to his office week after week thoroughly relieved, for exactly this reason do I have such faith in gynæcological operation, and in Alexander's operation in particular. To my mind this is the only physiological operation at present that we can suggest for the treatment of these cases, and if a patient presents herself to me with a retrodisplacement of the uterus and symptoms I suggest to her an Alexander's operation, when the condition is suitable. If she does not wish an operation and wishes a pessary, then we have to submit to the treatment by a pessary, but if she leaves it to me I would suggest an Alexander's operation, and I would suggest it, feeling that I am giving her the very best advice possible. The agencies maintaining the uterus in its forward position are intra-abdominal pressure, and the broad ligament having partly within its folds the round ligament, these maintaining the body of the uterus forward, are assisted by the utero-sacral ligament holding the lower portion of the uterus backward. If the body of the uterus is back, it seems to me there is nothing more rational than to shorten the round ligaments and bring it forward, and I consider it proper to suggest such an operation to a patient with a movable retroversion. I do not think there is any more danger about the operation when properly done than a cut on your finger.

There has been done on Dr. Cleveland's service, since 1892, almost 175 Alexander's operations by himself and his assistant surgeons. It has not been possible to keep in touch with all of them. I konw statistics mean nothing to the reader, yet statistics are something to the men who see these patients come back to them relieved. In 1895 I had occasion to look up closely the after condition anatomically and clinically of the patients on whom this operation had been performed in Dr. Cleveland's service. There were 83 in all. Of this number 53 out

of the 83 were either seen or heard from in a reliable way, and of those 53, 51 were clinically relieved of all symptoms. Those 51 were relieved of the backaches and sideaches, and were in excellent health, some of them had borne children; I think of that lot I had confined 6 or 7. The last 83 I have not looked up thoroughly, but I have in mind 10 or 12 that have come back to me and said, "Doctor, I am perfectly well." One case I treated with a pessary, and she was not relieved, though the uterus was held up. I did an Alexander's operation. She is now cured and has sent me others to have the same operation. I do not recognize that there is any danger in the operation at all.

As to the possibility of hernia after this operation, I do not see how any man can look at it in this way. By simply cutting down to the external abdominal ring and dividing the intercolumnar fibres, you do not destroy the pillars of the ring, you pull your ligament up; you transfer to this space, where there was a small portion of the ligament, a thicker portion and fill up the space. When you stitch this thicker portion of the pillars to the ring how can the hernia occur if you get primary union? While it is possible that there has been a case of hernia in some one else's hands, I can say absolutely as a fact that I never saw but one case of hernia, and in that case silkworm-gut sutures were left in and buried and followed by suppuration. I think we can readily put aside the question of hernia where this operation is well done. It is a small operation, it is one to my mind that does not involve any danger, and I feel perfectly clear and conscious that I have done the best thing that I can offer to patients. If they do not wish an operation, if they wish to be treated with pessaries, I will do the best I can with pessaries, but the other is shorter, it is better, and I think it is altogether more satisfactory.

As far as treating displaced uterine adhesions, that is another thing. We cannot apply Alexander's operation to it. I think the best way to treat them is to open the abdomen, break up the adhesions, and then to operate on the round ligaments. In ventral suspension you bring the uterus out of the pelvis up to the abdominal wall; I do not like this, I do not think it physiological; I think the other operation is much more anatomical concerning pain in the scars; all these pains are neuralgic, and they come almost altogether from breaking the nerve following the course of the ligament. If that nerve is not broken or included in the stitches, you do not have it. I have seen quite a number of them, and never seen them hang on for any length of time. I have seen some cases where the patient has had pains in her back, and upon close examination I find it is due to some uterine adhesions

slight in character or too much of the ligament drawn out. This is the argument used by the advocates of vaginal fixation, that you cannot always tell when there are adhesions present. Given a patient under ether and an ordinarily thick abdomen, I believe that anyone accustomed to examining patients can detect adhesions. I talked with two gentlemen this evening before coming down here. I had done an Alexander's operation for patients of both of them. They said those patients were perfectly well and did not know they had a uterus.

This operation should be followed up at once by operations on the cervix and perinæum if they are needed. If it is a healthly uterus, I believe in repairing the cervix by excision. To do an Alexander and leave an open perinæum, you get bad results. The perinæum should be sewed up and the uterus curetted at the same time. In Dr. Cleveland's hands and those who work with him, we are perfectly satisfied with Alexander's operation. We have no deaths from it and at present we have no suppuration. Some time ago we had, and that was our fault. It is not the fault of the patient, it is not the fault of the operation; it is the fault of the surgeon or his assistants. You cannot ascribe that to the operation or any fault in the operation.

Dr. MALLETT: I have just been wondering whether in my experience the number of retrodeviations of the uterus have increased or diminished, and I have wondered whether the after treatment of obstetrical cases has affected the number of these cases. During my service in the maternity hospital it was the custom to keep the women on their back for eight days, and then, three days afterwards, they were removed to the convalescent ward. Since then, I am told, they are made to change their position after the first or second day, to lie on one side and then on the other, and it has occurred to me that this would be a very good idea, and possibly a good many of the retroversions that occurred after delivery, have come from lying on their back for a length of time. I do not remember in my clinical records whether of late the number of them have increased or diminished.

In regard to the treatment of this condition, I agree with Dr. West in his ideas of the treatment of freely movable uterus and in the use of pessaries. I think that with patience in the use of pessaries, we can relieve them, and in some cases cure them. I have in mind one or two where I think they were absolutely cured. One I saw a few days ago, is a saleslady in a large establishment downtown. The uterus probably had not been displaced for a great length of time. I replaced it without difficulty and introduced a pessary and after three months' use of the pessary, taken out three times and cleansed, I removed it

entirely, and since that time she has been a little over two months without it, and the uterus a few days ago was all right, and she is relieved of all the symptoms, pain in the back, profuse discharge, etc. If the uterus can be replaced and there is no inflammatory condition of the appendages, and the perinæum is good, I think a pessary should relieve it, and in those cases I do not think the Alexander operation would be indicated. Where there are slight adhesions, I have used Schultz's method once or twice, and it occurred to me that if the adhesions were large enough to contain large vessels that would endanger hæmorrhage, they could not easily be broken up in that way. The case that Dr. West spoke of, I happened to be present at the operation, and it would have been impossible without doing great violence and injury to have broken up the adhesions by Schultz's method. Where there are firm adhesions, I think the way to remedy a case like that would be to open the abdomen and divide them. When the adhesions are broken up, I have been in the habit of fixing the uterus to the abdominal wall. The cause of the failures by ventral fixation is that the uterus is attached too high or too low. It occurred to me that the best way to estimate the proper height of the uterus would be to introduce a sound, and then bring the uterus forward and fix it in that way. Of course at clinics we generally see the bad results and we see bad ones by all methods not used. Cases of vaginal fixation have all appeared to me to be too low in the vagina.

Dr. A. P. DUDLEY: The subject is so vast that one cannot do it justice in a few moments. The title of the paper means so much, and the doctor has touched so many forms of treatment, that I cannot say but a few words. In the first place, I may cross swords with some of you in my opinion as to the use of the round ligaments in retaining the uterus in position. As to the above ligaments holding the uterus in position, I feel they have very little to do with it. It is a question of gravity in the human subject that keeps the uterus in position, and the treatment of the case depends entirely upon our ability to distinguish between a healthy uterus retrodisplaced for a time, and a uterus that has been down sufficiently long to become diseased to a certain extent, one complicated by adhesions, one in which there are no adhesions about the uterus, but adhesions about the appendages, and then diseases about the appendages and intestinal adhesions. All these things must be taken into consideration in choosing the method of treatment. If we are so skillful that we can differentiate between a perfectly healthy uterus that is retrodisplaced, as Dr. Broun says, that has been lacerated to some extent, also qualify our method of operation with the

statement that we can do the plastic operation or else the Alexander will be a failure, how do we know that if we do the plastic operations, that we cannot get along without the Alexander operation? We cannot say positively. Now then, the statement made by Dr. Tull that the retrodisplaced uterus is not pathological to any extent, conflicts entirely with Dr. Broun's argument.

It is my belief that symptoms relieved by the Alexander operation, if there are adhesions to the appendages, is due to the return of the uterus to the upright position. Bear in mind that the return circulation from the uterus travels nine inches perpendicular to the left renal vein on that side, where a woman has the most of her pain, it crosses into a circulation greater than its own. Now then, couple that with the pressure from a loaded sigmoid flexure of the colon. On the opposite or right side the circulation is not so impeded. Then take a retro-displaced uterus and simply do an Alexander operation, and you relieve that circulation. You allow it to return to the normal, and the reflex symptoms are relieved, but that does not say that the adhesions are broken up, not at all. It does not say, even when the uterus is movable, that the appendages are healthy. So that I say it is all empyrical. It is simply a question of being able to make a diagnosis. When I make a diagnosis of a perfectly healthy uterus, and when I can restore that uterus without giving the woman pain I never would think of doing an Alexander operation until I had used the pessary first. Again, I would never think of subjecting a woman to a long course of treatment with the pessary if the cul-de-sac were rigid. If we can make a diagnosis sufficiently clear and see that by a process of careful massage we can relieve these adhesions, let us do that. That is a proper treatment, but to attempt to break up firm adhesions, such as Dr. Freeborn has spoken of, and risk the chance of hæmorrhage or tearing of the gut, I think a man is doing an unwise thing. I would not dream of it. I would not dream of doing an Alexander operation on such a case until the adhesions were free. To make an Alexander in such a case would simply be putting one force against another, and I have opened many an abdomen and found adhesions as large as the round ligament itself. It would be nonsensical to apply an Alexander operation in such a case as that. If there were history of gonorrhœal infection and salpingitis, and we attempted to do an Alexander operation, we would have relieved the position of the uterus, but the fimbriated extremity of the tube would still be displaced. So I say it is simply a question of being able to distinguish these cases, and when I can do that, I would use

the pessary for the proper case, and where there are adhesions, I would break them up by massage, if possible.

I would certainly use ichthyol in place of boro-glycerine, because I think it is a very powerful absorbent. If I could get the uterus into a proper position, I would not think of doing an Alexander operation When you get a case that is freely movable, do your plastic work first, and use your pessaries. The simple thing that you want to accomplish is to put the uterus in position anterior to the perpendicular of the body, and any force which you may use per vagina, by the addomen or by the womb ligaments is the proper one. With respect to hysterorrhaphy, I believe that too much is done. I never use buried sutures. I did in one or two cases, and took them out again. I make a simple form of operation, through an inch or inch and a half incision, simply break up adhesions, see that the ovaries and tubes are perfectly healthy and then, denuding a spot half an inch in diameter on the anterior surface of the fundus, I put the sutures through the entire abdominal wall, then through the fundus, taking care not to pierce the uterine canal, then pass them out through the opposite abdominal wall and make them act to support the uterus, and close the incision. The peritonæum becomes a suspensory ligament. The uterus moves with the diaphragmatic action of the pelvic floor, the bladder is not imprisoned, the ovaries and tubes have a better chance, the uterus is not fixed, there is less pain, and it answers the purpose, and that is all I want, to simply keep the uterus in the anterior position. So I say, I never use a buried suture, and the patients do not complain of the after-pain and dragging. I do not believe in the Alexander operation, because I believe it is empirical. When we have a case in which the uterus is perfectly movable and there is no symptom attending the ovarian function, then I say a pessary and plastic work will answer the purpose.

Dr. BROUN: I want to say that, as far as I know, no one who has ever done the Alexander operation, would ever dot it on an adherent uterus without first breaking up the adhesions.

Dr. DUDLEY: How do you account for the failures you reported to-night?

Dr. BROUN: I only reported two failures; one of these failures, the perinæum had not been repaired. In the other case I am not aware of the cause, I do not remember the case. It was in 1895. I would have to look it up still further.

Dr. MUNDÉ: I certainly have some very strong feelings on this subject. I have been referred to repeatedly this evening in the paper and discussion. I can only say that I am an unequivocal advocate of

the use of pessaries. I have within the last year seen three cases of cure by a pessary, and I presume that would be about three per cent., although I cannot follow up all the other cases. One was in a lady who has worn a pessary for about ten years, who at last is able to do without it, because the uterus stays up. The second, where there were adhesions of the uterus and appendages, and after detaching them gradually with my fingers, I put in a sharp curved pessary, so sharp that it cut into the vaginal vault after wearing it only two weeks. I, of course, did not replace the pessary, but packed the vagina with lamb's wool and repeated this a few times, and found that the uterus then remained in place. I think that the adhesion produced by the irritation of the pessary had something to do with keeping the cervix back, and, therefore, the fundus forward. At any rate, she remained cured. That was a lady who had been told she must have her appendages removed and her uterus brought forward by Alexander's method. The third is a young lady, a school teacher, with retroflexion of the third degree and prolapse of both ovaries. I inserted a pessary, a modification of Albert Smith's, which she wore for nine months. Then it was removed by a lady physician in the school where she is a teacher, several hundred miles from here, last September, which was exactly nine months after I had introduced it. I think I saw her several times between. She came to me in Christmas week, and I found her uterus, three months after the pessary was removed, in perfect position, all her symptoms relieved. These are three cases inside of a year. My experience is still the same as it was reported in 1881 before the International Medical Congress in London. I do not think I have seen more than ten per cent. of cures from pessaries; still, I use them, I have nothing else to do. I cannot do an Alexander on every patient who comes to me. I will not do a ventral fixation; and the patients are relieved by pessaries, and about ten per cent. are cured by them.

Dr. DUDLEY: Do you find more than ten per cent. perfectly movable?

Dr. MUNDÉ: The retroversion, oh yes, decidedly so. I cannot give exact statistics on this point, because I have not looked it up; but I think that in the majority of cases of women who come complaining of symptoms due to retrodeviation of the uterus, I find the uterus movable. When I say the symptoms which they complain of, they are usually bearing down, dragging sensations, inability to walk for any distance, pressure sensations on the rectum, dragging sensations on the bladder; and these sensations, I think are not due so much to the backward displacement, as to the fact that the uterus is more

or less prolapsed, that the pelvic floor is relaxed. But I think that the displacement downwards, I mean the prolapsus of the uterus, and the relaxation of the pelvic floor that is so common in these cases, that these produce the symptoms, the concomitant conditions. Again, I see a good many cases of very bad backward displacements in young girls, retroversions and retroflexions, where they have been produced by over--exercise. I have two or three girls who come to me every few months, where the displacement has been produced by over-exercise at lawn tennis; at least that is the only cause that can be made out. I have relieved these by a pessary. I could not subject these young ladies to an Alexander operation. It seems to me brutal to suggest it. I do not perform an operation on backward displacements of the uterus unless a patient insists upon it. If the patient says, "I want to be cured of this; I don't want to wear a pessary for an indefinite length of time," then I perform the Alexander operation. Apparently, the advocates of the Alexander operation this evening consist of Dr. Broun and myself, but I think we can hold our own. I have done about 140 operations, that is on 140 patients, and I have very good reason for saying that the operation has been a success in my hands. There are a good many ways to Rome; so long as we get there, it does not make much difference how we get there.

Dr. Dudley does not believe in Alexander operations, he gets there in another way. I believe in Alexander's, Dr. Broun and Dr. Cleveland likewise. I have no axe to grind with the Alexander operation, although I was the first man to perform it in this country. I have seen no deaths, I have seen some suppuration, but I believe with Dr. Broun that it was my fault or my assistant's, or some sloppy way of operating, such as taking too much time hunting for the ligaments, that one ought to find right away. The failures have been in the breaking of very thin ligaments, and that is the objection to the operation; but I am a decided, an enthusiastic, a persistent advocate of the Alexander operation in suitable cases. Where the uterus and appendages are adherent, I would no more think of performing it than I would of cutting out a liver for adherent uterus.

As regards ventral fixation, I have done it a dozen times. I did it about two weeks ago, after removing a double pyosalpinx; when I pulled the uterus loose from its adhesions and sewed it to the abdominal wall with three deep sutures. The woman had several mural abscesses, I think, on account of these buried sutures. Still, in such cases it is a very good operation. As for plastic work in the vagina and on the uterus, of course, I always combine Alexander's with it,

when the uterus is displaced. If the cervix is lacerated, or if the uterus is prolapsed, as much of the cervix is removed as the case seems to warrant, and the cervix is then sewed up in the proper manner. I must confess I do not agree at all with Dr. Dudley when he says he would do the plastic work first and would then expect the uterus to retain its place. I used to try this before I knew the Alexander, and I found I had to put a pessary in, because, how can you expect a perinæorrhaphy to keep in place a retroflexed uterus?

Dr. BROUN: In your experience, have you seen any hernias?

Dr. MUNDÉ: I personally have seen only one hernia. I think that of 140 women I have operated on, I have probably seen two-thirds again. I saw one last week at the hospital I operated on three years ago. She had a cystocele that returned, that is true. The Alexander does not cure cystocele. She came back, and I did not keep her in my service, because her uterus was in a normal position, and the cystocele too slight to warrant operation.

Dr. BISSELL: Have you ever seen phlebitis following Alexander's operation?

Dr. MUNDÉ: I have never had any deaths; I have had an occasional suppuration, which I think was due to faulty surgery.

Dr. BISSELL: Phlebitis has been known to follow the operation.

Dr. MUNDÉ: I do not know, I never saw it. I think the Alexander operation is absolutely devoid of danger if properly performed, and in my experience almost invariably successful immediately, and in its subsequent results.

Dr. WEST: Dr. Harrison has mentioned that I did not say anything about massage. I did speak of it in describing the method of treatment. I said that I would, after introducing the speculum, allow the air to go into the vagina, withdraw it, then pass my finger up to the fundus and press it forward, for a sufficient length of time to feel the uterus yield somewhat. I think that is all the massage that is needed. I do not know of any other term to give it.

Dr. HARRISON: That is not massage as the term is usually employed.

Dr. WEST: With regard to my statistics as to the cure by pessaries, I have been in practice such a short time, that any statistics I might give on the cure of treatment by pessaries would be practically worthless. Schultz's method of breaking down adhesions under anæsthesia, I do not consider advisable, because I believe it very dangerous. As for the Alexander operation being a natural and physiological restoration of the uterus, I cannot believe it. I have

operated for other things a number of times, opened the abdominal cavity, and have never seen the round ligaments supporting the uterus. They always pass toward the internal abdominal ring with a gentle curve, without giving any support to the uterus whatever, and I believe that these ligaments are practically useless unless they may during pregnancy guide the uterus back down to the proper position as involution takes place. Just as we do not know what the vermiform appendix is for. I do not believe these ligaments are to hold the uterus up. As for the pain the doctor says may be due to neuralgia; it may be a satisfaction to the doctor to know that, but I imagine the patient would be very little relieved to know that they were due to neuralgia. The doctor says he sees no reason why hernia should occur. I have reported three cases which have occurred in my limited experience; this being true others must have had the same experience. I have seen the most skillful operators in Alexander operations fail to get the ligaments and seize upon a conjoined tendon, and pull up a piece of that, and think they had the ligament, and then drop that and get another piece of the tendon. I saw a man draw down tissue, thinking he had the round ligament, until he drew an ovary and tube out of the opening that he had made.

Dr. MUNDÉ: I forgot to say that I do not suppose I have seen out of these 140 women more than half a dozen who complained of any pain after the operation, after the wound was healed. The alleged subsequent neuralgia in the scar was never heard of. I think Dr. Broun's remarks about leaving out the nerve are very good. The nerve should not be included in the sutures.

Official Transactions. J. N. WEST, *Secretary.*

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, February 18, 1898.

The *President*, HENRY P. NEWMAN, M.D., in the Chair.

Fibromyoma of the Uterus.

Dr. FRANKLIN H. MARTIN: I have two specimens to exhibit, and I show them not because there is anything unusual about a fibroid of the uterus removed by hysterectomy in this stage of our history, but because it may help to illustrate the subject of the evening, and because of the special difficulties encountered in dealing with the two cases.

The first specimen is from a woman 45 years of age who had suffered for a long time with excessive hæmorrhage and all the classical symptoms of fibro-myoma of the uterus. Besides the excessive hæmorrhage there was considerable pressure on the bladder and bowel, so much so that it was with great difficulty that the bowels could be gotten to move. In other words, there was partial intestinal obstruction. The specimen will show for itself. You see the uterus with both of the appendages cystic, one of them containing purulent matter, and the other fluid which at one time probably had been pus. This subperitonæl mass was in front of the uterus and buried beneath the bladder; it had separated the walls of the vagina from the bladder and the bladder was lying upon the top of it. It was enucleated from beneath the bladder, being lifted from between the bladder and the vagina. The enucleation was very difficult, but by keeping close to the tumor to avoid the ureters, which were hugging the mass, I succeeded in successfully removing it. This specimen shows how difficult it would be to apply myomectomy to all cases. It would be almost impossible to remove the growth without, at the same time, removing the uterus. The patient was operated on a week ago, and is convalescing.

Multiple Fibroids of the Uterus.

This specimen was taken from a woman 65 years of age, a resident of Colorado, who had been subject to excessive hæmorrhage for a number of years. Six years ago the patient came to me for treatment by

electricity. I applied the positive pole to the uterus and succeeded in relieving the hæmorrhage so that at that time she considered herself as symptomatically cured, by the electricity. About three years thereafter the family physician wrote me to the effect that the patient was beginning to bleed, and during the last six months it was so excessive that she sought an operation, and a week ago I removed this uterus with its accompanying tumor. There is nothing unusual about the case except that we found no adhesions. I believe Joseph Price has made the statement that it is impossible to give electricity to these cases without producing very firm adhesions. Personally, I have always maintained that electricity would stimulate the absorption of adhesions already existing and never cause them. There were small multiple cysts in both ovaries. Over the bladder were two small subperitonæl fibroids.

At another portion of the uterus is another small fibroid about ready to drop off after incising the tissue over it, and there is still another one that can be incised and rolled out. The uterus itself, however, is made up of small multiple fibroids in the interior of its body. Anyone who examines these specimens will be convinced that it would have been a hopeless task to have done a myomectomy with the idea of retaining the uterus. This case was operated on a week ago, and is convalescing.

I have three other specimens which illustrate the hopeless task one would have in attempting to perform myomectomy, and expect the patient to be permanently relieved. (Several specimens of uteri removed by hysterectomy contain several myomatous centres each. I will simply pass them around. I think they will be of interest in connection with the discussion of the subject this evening.

Dermoid Cysts.

Dr. J. FRANK: These specimens I brought with me from Vienna, when abroad last summer. In going through Professor Chrobak's private museum, his assistant, Dr. E. Knauer, kindly gave me these specimens to take home with me, and I thought it would be of interest to show them to the members of the Chicago Gynæcological Society. They are the contents of a dermoid cyst which was removed from a woman 30 years of age, who presented no special history. The dermoid cyst was as large as a child's head. So far there are only four such cases reported, this one making the fifth. I have here a reprint of the case, showing a photograph of the dermoid cyst with its con-

tents. The microscopical examination of these little "balls," as they are termed in German, are composed entirely of horny, epithelial cells, detritus and a few fat cells. The cases that have been previously re-



ported are two by Rokitansky, the first one in 1833; one by Ruck, and one by Frænkel.

THE PRESIDENT: We have with us this evening, besides the eminent gentlemen whose names appear upon the program, a number of surgeons and gynæcologists, and we cordially invite them to participate in the discussions.

A Plea for Examination of the Rectum in Operative Gynæcology.

Dr. JOSEPH M. MATHEWS, Louisville. Ky.: Your President has honored me with an invitaiton to read a paper, and I dislike very much to offer an apology. I have not prepared a paper. In the few remarks I shall make I shall not dwell upon rectal

reflexes in their relation to gynæcological work, because some ten years ago I read a paper on that subject, and I have often said since that if I was ever forgiven for writing it I would never write another.

Some few months ago there was sent to me from a city in Texas a very distinguished minister of the gospel who had the lower portion of his rectum, including the sphincter muscle, removed, simply because he was suffering from asthma. I wondered whether that article of mine had anything to do with it.

Tonight I would rather give you a little experience of my own of examination of the rectum in relation to *gynæcologists* rather than to gynæcology. I believe that there are gynæcologists and gynæcologists, and what I shall say to-night I hope you will not take as personal. I believe that the time has come for the abandonment of instruments in gynæcological and in rectal examinations. I was trying to think the other day of some condition in the rectum that would require an examination by aid of the speculum, and I failed to think of any. I wondered if gynæcologists could not dispense with the speculum in their examinations. I believe all pathological conditions involved here can be made out by the touch, without the use of instruments. I believe the day has arrived when instrument makers, who expect to profit by providing surgeons and gynæcologists with new instruments in this line, are no longer needed. I find no use for them in my special line, and I have wondered what use you find for them in yours. In the rectum there are pathological conditions that are so insidious in their nature, that there are no clincal evidences of their existence unless by direct question of the patient for symptoms that are forgotten by the examiner. I would mention to you the fact that there is a disease that affects the rectum in many cases which you see that has but few symptoms. I refer to syphilis of the rectum. I am sure that you have met cases where the only symptom complained of was constipation, but upon examination you have found the rectum blocked with a deposit. You will permit me to narrate a case of this kind in my own practice.

A lady consulted a gynæcologist, and had her ovaries removed. In a few months after that she consulted me, and upon examination I found a cancer of the rectum. I performed the operation suggested by Kraské and removed her rectum. The only difference between the gynæcologist and myself was that she lost her ovaries, but got out with her life. She lost her rectum at my hands and died. The point I wish to draw to your mind is, was that rectum examined by this gynæcologist? I do not think so. I have reported five fatal cases of disease of the rectum that had been operated on by gynæcologists, and

yet it was the rectal disease that ended life. I wondered if these gentlemen examined these rectums. So if I make no other point here to-night, I would say that before doing any operation in the abdomen make a careful examination of the rectum. Permit me to cite a case that has been observed by me in the last few weeks.

A lady consulted me, saying that the main trouble was pain in the bladder and urethra. She had a frequent desire to urinate, and the act of urination was accompanied by the most excruciating pain. I referred her to a gynæcologist. He first removed the left ovary, and reported to me that it was cystic. This operation did not relieve her of the trouble. He then did a second operation, having discovered after the first operation that she had a right floating kidney. He stitched that. He then said to her, that it would be necessary to do another operation and stitch the other kidney. She was not relieved by any of these operations and was referred back to me. I thought it best to make a little further exploration in my line, and my examination revealed that she had sustained a fracture of the coccyx a few years ago, and I removed it. This relieved her. I believe that if my distinguished friend had examined thoroughly the rectum, which might include the coccyx, he would not have stitched the kidney, possibly not have removed the ovary, and certainly would not have recommended that the other kidney be operated on. I know that you gentlemen will say to me that no operation is ever justifiable unless we can detect a pathological condition. Do you always do that? I have heard my distinguished fellow gynæcologists say that we can never tell what is in the abdomen until we make an exploratory incision. Therefore, if the pathological condition is not detected before you do these operations, is it not possible that you may find by reflex (I hate to use that word) the cause somewhere else? In my practice I have had numerous cases where the most serious conditions existed in the rectum, and other operations were performed upon the patients, and the rectum never examined. I am not much of a believer in benign strictures of the rectum. We may have cancer of the rectum quite frequently, and you know that we may have cancer in more places than the rectum without the manifestation of the symptoms laid down in the textbook. I have called attention to the fact that, in my practice at least, I have observed many cases of cancer of the rectum unaccompanied by pain. This would not be the proper thing, perhaps, to say before a medical class, but to you gentlemen who have observed these things, I know you will bear me out in this assertion. The most prominent symptom, as given by some of our text-books, may

be absent, and therefore, unless the rectum is examined the gynæcologists may remove an ovary which plays very little part in the affection of the woman. I would urge you in all of your examinations of patients to pay some respect at east to this organ, making your examination by the finger, not by the speculum, not by long tubes inserted into it, or anything of that nature, but simply by the introduction of the finger. I can assure you from my own observation of twenty years that even so simple an affection as a fissure may have very many reflexes, and outside of being a simple disease you may find a reason which would prevent you from doing a laparotomy. In my part of the country, at least in the many cases I have tabulated, the rectum does not receive the attention that it should. I do not propose to consume any more of your time, and I thank the President and members of your society for inviting me to be here tonight.

The Eastman Method for Vaginal Hysterectomy.

By JOSEPH EASTMAN, M.D., Indianapolis, Indiana.

(See page 452.)

DISCUSSION.

Dr. F. HENROTIN: I did not hear the preliminary remarks of Dr. Eastman, but I have seen him do the operation he has described, in which he strips the uterus step by step very skilfully and beautifully. It is perfectly feasible to the eye, and I considered it at the time a very popular and ingenious method of bringing the uterus into view.

As regards the use of ingi-puncture or the cautery for the purpose of performing these hysterectomies, I have used the cautery in every instance of malignant disease for several years. There is always an advantage in feeling that the tissues are burnt out in that way, and I would endorse Dr. Eastman's views entirely. I do not think any apology is necessary for speaking about hysterectomy, except to decry its frequent performance. It has been done too extensively and it does a great deal of good to have a master in the art give us his views on the subject.

Dr. EMIL RIES: I have been very much interested in Dr. Eastman's paper and his method of extirpating the uterus through the vagina. There is only one trouble with it. The time for vaginal extirpation of the carcinomatous uterus is past, for the reason that we

cannot extirpate the carcinoma entirely by simply removing the carcinomatous uterus. In 1895, I described and dealt with this subject very thoroughly for the first time, and I have since been able to demonstrate the correctness of my views on this subject by reporting cases on which I have operated. A few days ago I demonstrated before the Pathological Society a uterus in which the carcinomatous process appeared to be limited to the anterior lip. The uterus was freely movable, and the case was to all appearances an extremely favorable one for vaginal hysterectomy. I did not operate by vaginal hysterectomy, but followed my method of operating through the abdomen and extirpating the lymphatic glands along with the carcinomatous uterus, as every surgeon does in cases of carcinoma of the breast in which he removes the axillary glands. The iliac glands on both sides, although they are not enlarged, on palpation are microscopically full of carcinomatous strings, and underneath the right external iliac vein there was a lymphatic gland the size of an egg full of cancer masses. Along the left external iliac vein was a chain of lymphatics full of carcinoma. The microscopical slides of these specimens are ready for everybody's inspection. This is not the only case I have had. Therefore, I say the time for vaginal hysterectomy in cases of carcinoma of the uterus is past and discussions of such methods are just as much out of date as extirpation of the mammary gland for carcinoma without extirpation of the lymphatics.

Dr. EASTMAN (closing the discussion): I have very little to say except in answer to the gentleman's statement that the time has passed for vaginal hysterectomy for cancer. I might say in that connection that I have removed a great many cancerous breasts in the last thirty years of my surgical work; have gone widely and removed all the axillary glands. I have had a return of the disease. On the other hand, I have removed the breast, leaving the axillary glands intact, and the disease has not returned. I doubt if we can always get out the cancerous glands in the pelvis in advanced cases of the disease and have our patients live. It is to be remembered, also, that Dr. Berne, of Brooklyn, without doing any cutting operation whatever, has had about as good a record as those surgeons who have operated through the abdomen or vagina. Moreover, there is something in operating by the vagina, and as Dr. Henrotin has said, with the cautery, we should go wide of the disease. In the cases I have had to deal with the disease has not always gone directly to and invaded the broad ligaments and the chain of lymphatics at the side of the cervix, but has extended towards the vagina. In other instances the carcinomatous

process has extended to the fundus, again to the broad ligaments. In the cases in which the disease has been confined to the fundus of the uterus the fewest number of recurrences has been noted. I have had a number of cases where the disease was limited to the fundus, and by resorting to vaginal ingi-extirpation, going wide of the disease there has been no return. The doctor (Dr. Ries) is a better man with his fingers than I am if he can go down as he must in some cases through a finger's length of fat among fat mesentery and dig out with his fingers all these glands and have a live patient left. So, Mr. President, there are two sides to this question. We must not be too positive in our declarations that the vaginal method for cancer offers nothing. It does offer something, especially ingi-extirpation. The fact that so many women who have been operated on by this method are alive to-day is a powerful argument in its favor.

The igni-extirpation method suggested by Dr. Henrotion is the only proper one to pursue in cancer. Go wide of the disease, use the thermo-cautery, taking a large portion of the vaginal wall and pushing the ureter away as far as possible, or as some Germans do, sever the ureter and deal with it later.

I thank the gentlemen for their kind consideration of my remarks.

Removal of Fibroid Tumors of the Uterus Without Hysterectomy.

By E. E. Montgomery, M.D., of Philadelphia.

(See page 464.)

Discussion.

Dr. Franklin H. Martin: I wish to compliment the essayist on this paper, and I regret that he was not here when I presented my specimens for the purpose of illustrating the subject of this evening. I have had but little experience with this method of treating uterine fibroids, and I would like to know to what extent the doctor uses it. If he can remove three or four, or nine or ten fibroids, as stated in the paper, then the method seems to have an unlimited field. I would also like to ask if this operation is employed to the exclusion of all others by him for the removal of interstitial, submucous, or suberous fibroids. Theoretically, the method strikes me as one that would necessitate a great deal of cutting or mutilation in the majority of cases of uterine fibroids, and that when the operation was finished the pelvis would be

left with a bleeding, riddled mass, which might give trouble subsequently; in other words, in tumors involving the uterus to the extent of some of those described by the operator, it seems to me hysterectomy would be a much easier and better operation.

Dr. A. GOLDSPOHN: I am very much interested in Prof. E. E. Montgomery's paper, but I would like to hear his opinion in regard to how he would proceed in the case of a pregnant uterus with fibrois; and in order to present to him a specific case, I will state briefly a case that I dealt with recently, the specimen of which I forgot to bring to-night.

A healthy female, thirty-seven years of age, recently married, never before impregnated, had a single fibroid tumor in the left wall of the uterus, extending down so that the entire left uterine wall was undermined beneath the territory of the left uterine arteries, that is, low enough down so as to act as a barrier in case of pregnancy. She was pregnant three months. I first did a myomectomy, and then debated the matter as to whether it would be safe to leave the uterus. The fibroid tumor was larger than the uterus, with the three months' factus. After the tumor was enucleated the cavern bled very profusely. The outer shell was about one centimeter in thickness on an average and had upon its exterior the left tubal junction and insertion of the left round ligament, so that the left side of the uterus was thoroughly undermined. My experience in dealing with hæmorrhage from placental remnants in the uterine cavity, in the presence of a fibroid tumor, has been that even under most favorable conditions and with all needed conveniences for curettement and packing, it is a difficult matter to arrest it always; and it has impressed upon me the danger of controlling hæmorrhage in such a uterus, in case of abortion. Certainly, if this uterus had not been pregnant I would not have thought of removing it. To sew up this cavern would, in my opinion, bring about miscarriage within a few days; and the supervention of abortion in the after-treatment of such a case would have been a serious matter, as the removal of the placenta would probably be attended by considerable difficulty and hæmorrhage. There would then probably be two bleeding cavities, the intrauterine and the intramural, in which hæmorrhage would probably have been re-established by the disturbance incident to abortion. I therefore chose not to hazard the patient's life, inasmuch as she was thirty-seven years old and was willing to have the uterus removed. As it was, her recovery was as smooth and comfortable as that of most cases is after minor operation. But if my judgment is not correct in this matter, I would like to know it.

Dr. N. SENN: I was not able to be here in time to listen to the very

interesting paper of Dr. Montgomery. I have just scanned the paper over, and I have been wondering what technique he pursues in myomectomy by the transperitonæal method. He speaks of exposing the tumor by an incision, but does not tell us in what direction the incision should be made. It is important in a transperitonæal myomectomy to make the visceral incision, in the first place, as he insists, very small, using the knife as little as possible. He makes a remark to the effect that the enucleation should be done largely, not by the use of the finger, but the director. The more I have resorted to this method, the better I like it. I believe it will be the ideal way in which to treat by operative procedure uterine myofibromata in all cases in which such a procedure is possible anatomically or pathologically. I have made it a rule recently to invariably make the incision transversely, because by making the incision in the direction of the blood vessels we minimize one of the dangers attending this operation—hæmorrhage. The next precaution I have learned is to make the incision very small, and it is remarkable what a little patience and perseverance will accomplish in enlarging the space by the use of dull instruments. Hæmorrhage in such cases is rather of a venous than of an arterial character, and by the use of the director we often displace veins of considerable size and thus reduce the danger from this source.

Another question that interests me much is how to dispose of the visceral wound. The paper said that the wound should be closed with two rows of catgut sutures. I close a large wound after the removal of a large myofibroma in the same way as we close the uterus in Cæsarean section; that is, I resort to buried catgut sutures, holding in contact the muscular fibres by one or two rows of buried catgut sutures, according to the depth of the wound, after which the margins of the serous surface are inverted and sutured in that position. By applying the sutures in this way prevent the formation of dead spaces and bring the tissues into normal mutual relations.

I have no remarks to make at this time in reference to the vaginal route. Unless the tumor involves the lower segment of the uterus, the abdominal route is the preferable one. I certainly believe the paper of Dr. Montgomery will do great good in this city in encouraging gynæcologists to do less and less mutilating and more and more of conservative operations.

Dr. C. A. L. Reed, of Cincinnati: It affords me great pleasure to be present this evening and listen to the proceedings of this society, and it also affords me gratification to participate in the discussions. I have been prompted to take the floor by the remarks of my dis-

tinguished friend—Professor Senn—if for no other purpose than to bring glad tidings of great joy, that the gynæcologists of today are working along conservative lines, and have for their object the conservation of all structures possible. I think the period of radicalism, particularly as pertains to the surgical treatment of myomatous growths of the uterus, has passed. With the French treatment of morcellement, with the American practice of myomectomy, I believe to-day we are saving organs which a few years ago were sacrificed, not to unwarranted zeal, but to the fact that our knowledge had not yet attained that precision and accuracy which enable us to deal with these cases as we deal with them to-day.

With reference to the question of technique I am forced to the observation which I was prompted to make in connection with Dr. Eastman's paper, namely, that certain processes of evolution seem to apply without reference to local influences, or, for that matter, to the general dissemination of public facts. I believe that step by step we are beginning to realize the various stages of development in these several operations. I know that I came here quite full of the technique of vaginal hysterectomy, for instance, and found myself so thoroughly anticipated by Dr. Eastman's paper that it behooved me to remain silent. Perhaps the same rule might apply in the present instance, for I have been dealing with these cases of more or less distinctly pedunculated myomata of the uterus very much after the method that has been outlined by Professor Montgomery. It is astonishing to notice the facility with which multinodular myomata may be enucleated in these cases. The line of incision, particularly those growths that are in the fundal region, amounts to very little. I make the incision without reference to direction in any manner, so that I can command what appears to be the thinnest point of the capsule; but when we reach the lower planes of the uterus it is important to make these incisions along the lines of the blood vessels, thus avoiding division of these canals and consequent hæmorrhage. In certain cases, in which I have had what has been aptly designated by Dr. Goldspohn as a cavern, these caverns have persisted in filling up with blood which gradually oozes from all parts of the circumference, but yet it is not distinctly the product of any particular vessel, or artery, or vein, for that matter. In the hæmorrhage that defies treatment by ligature, I have simply found it necessary to fix the incision of the anterior layer of the peritonæum to the abdominal wound and treat it by gauze packing. This is undesirable, I grant you, yet I recall two distinct instances in which I have been forced to this recourse. It lays the foundation for

subsequent ventral hernia, and even in the absence of this complication there yet remains unpleasant traction, such as was concerned in the old, but I believe almost obsolete, operation, of ventral fixation for other purposes.

The whole question of treatment of these multinodular growths cannot be settled by mere enucleation. Very often, if we endeavor to save the uterus, after having enucleated a number of these smaller nodules, we find that we are about to be defeated in our work by some remaining centres of neoplastic growth which defy our manipulations. Under these circumstances I have had very satisfactory results by simply drawing up the broad ligaments well below their upper margins, and with the circular needle passing a firm ligature around the lateral vessels, tying them firmly and thus minimizing the arterial supply to the organ. In this way I have eventually secured a progressive atrophic change in the growth which I could not remove. I recall two or three instances in which I have had recourse to this step and it has been satisfactory. I only mention these things not only to show that we are interested in this question, but, as I have previously said, the trend of operative gynæcology is in the direction of practical conservatism.

Dr. E. C. DUDLEY: I published about eight years ago the method mentioned by Dr. Reed of removing the tumors and stitching the tumor cavity into the abdominal wound. Instead of resorting to this method I now prefer to open directly from the tumor cavity into the uterine canal, to dilate the uterine canal and pack it with gauze, to carry the gauze into the vagina, close the uterine wound with buried catgut-sutures, as in Cæsarean section, and then to drop the repaired uterus back into the abdominal cavity and close the abdominal wound without drainage. In this way one obtains satisfactory drainage from the uterus out through the vagina, and secures all of the advantages without the disadvantages which could come from stitching the tumor cavity into the abdominal wound. I was interested in the remarks of the essayist relative to splitting the anterior wall of the uterus after having separated the bladder from it in order to render the tumor in the anterior uterine wall accessible. I have advocated this method, not only for the removal of a tumor in the anterior uterine wall, but also for a tumor in almost any other part of the uterus. Even a small subperitonæal tumor, if the incision is carried into the peritonæal cavity, may be drawn into the vagina and treated almost as well through the vagina as through the abdominal wound.

I can scarcely add anything to what I have already said many times

and written regarding the conservative treatment of uterine myomata by myomectomy without hysterectomy.

A majority of all cases of uterine myomata may be treated satisfactorily and with greater safety in this way. This at least has for several years been my own experiences and that of others. Any operator who seroiusly makes the attempt to save the uterus in the removal of uterine myomata will find an increasing number of cases in which this will be perfectly possible and highly practicable. I have no sympathy with a certain sentiment which seems to favor the removal of the uterus every time one gets an opportunity, seemingly for the purpose of getting rid of it.

Dr. SENN: How long have you been practicing vaginal drainage in myomectomy?

Dr. DUDLEY: I cannot say exactly. I should say five or six years.

Dr. SENN: What led you to change your plans?

Dr. DUDLEY: The greater danger of ventral hernia and unnatural position of the uterus if fastened to the abdominal wall.

Dr. SENN: It is my duty to put myself on record to the effect that I published the operation described six years ago in the Transactions of the Illinois State Medical Society, which every good members should read.

Dr. DUDLEY: I heard and discussed the paper to which Dr. Senn alludes, but had forgotten that it contained this suggestion. I would like to ask Dr. Senn whether his publication of this method antedates any other publication. I had intended to publish it when I began to practice it, not then being aware that it had been published by any one. Does his paper antedate that of Martin of Berlin, who, I think, published the same or a similar thing?

Dr. SENN: I do not know. My paper was published, as I have said, six years ago.

Dr. DUDLEY: I would like to ask Dr. Senn another question. A special feature of your paper was the enucleation of the tumor and the stitching of the tumor cavity into the abdominal wound. Now, I take it for granted that the first time you published this method, and, for that matter, the second time, you had no knowledge of the fact that I had previously published it, both in the transactions of this society and of the American Gynæcological Society; and further, that you probably had no knowledge of the fact that Dr. Polk had antedated both of us in the publication of a similar method and had abandoned it for hysterectomy.

Dr. SENN: In answer to Dr. Dudley, I will say that both methods

were described in the same paper. I was afterwards corrected by Dr. Dudley in reference to priority of the abdominal drainage, but I *must* claim a little originality for the vaginal drainage.

Dr. F. HENROTIN: I must approve of the measures that have sometimes brought me so much joy in operating and say a word in favor of vaginal enucleation of fibroids, whether intramural or submucous. I do not think there is any operation in gynæcology so satisfactory as the morcellation, if necessary, of a growth sufficiently large to call for it, or the enucleation of fibroid tumors through the vagina. Of course, surgeons who are accustomed to operating through the abdomen will select that route, and those who are accustomed to operate by the vagina will possibly accomplish more in this way in a certain class of cases, for a fibroid tumor as a rule presents itself in some particular shape that gives an indication as to the best method and direction in which to attack it. It is the greatest folly for any man to attempt to enucleate a subperitonæal growth situated well up in the abdomen by the vagina.

To vaginal operators who have done this work there is much to commend the vaginal method in cases in which the tumors present reasonably well below. Some of the tumors may be subperitonæal, situated in the cul-de-sac and posterior part of the uterus, and may be enucleated through the cul-de-sac. They may be small in size and anterior to the uterus, and by separating and pushing back the bladder they may be reached in that way. Can we sometimes accomplish ideal results by operating through the vagina, particularly in the mural and submucous variety? Large uterine growths that will rise well up for a couple of inches above the pubes can sometimes, if the finger is insinuated in the cervix or the cervix is well dilated, be felt by bulging in the cavity of the uterus, so that they can be reached in that direction.

I simply wish to commend in few words the vaginal method, and to say that tumors can be removed by this channel much larger and much more frequently than is generally supposed by those who have not tried it, and that the results obtained thereby are very satisfactory.

Dr. C. S. BACON: I think a little more emphasis ought to be laid on the method of operating on myomata, not only submucous, but also intramural, by enucleation through the vagina and dilated cervix. The operation I have had the opportunity to see a number of times performed by Professor Veit of Lisden, formely of Berlin, who as you all know, is one of the most ardent advocates of this method of operating and has given perhaps the best indications for it. This operation is indicated where the tumor can be brought into the pelvis by pressure;

where the tumor is too large to be pressed into the pelvis, this method of operating is not suitable. The tumor may be either intramural or submucous; if it is anywhere in the uterine wall it can be enucleated from the inside of the uterine cavity.

The diagnosis of the location of the tumor with the possibility of operating is made by first dilating the cervix after the method described by Dr. Montgomery. If it is possible to enucleate and extract the tumor through the dilated cervix that is done. If it is necessary to increase the dilatation by a cutting operation, that is done in all cases by cutting through the anterior wall of the cervix after separating the bladder, whether the tumor be located on the anterior or posterior wall. This operation has been so thoroughly described and the technique and indications for it given, that it seems to me greater emphasis should be laid on it.

I would like to ask Professor Montgomery as to the subsequent history of the cases operated upon by him, whether any of them have become pregnant, and what was the course of pregnancy. It is recognized as one of the drawbacks of this operation that the results, as far as future pregnancies are concerned, are not very favorable. Indeed, very few cases of pregnancy have been reported and still fewer where pregnancy has gone on to term, after myomectomy, particularly after the enucleation of a tumor in the wall of the uterus. This fact, together with the fact that so many cases occur where latent myomatous nodules, which may subsequently develop, cannot be removed during the operation, has hindered its general adoption, and further facts in regard to the functionating power of the uterus are always of importance.

Dr. T. J. WATKINS: The advantages of myomectomy have, I believe, been well outlined. Very little, however, has been said of the disadvantages of the operation. The first objection to the operation under discussion is the presence of small nodules, which cannot be detected by palpation, but which are apt to develop and require a second operation. Another objection is the presence of soft fibroids, that have so much the consistency of the uterus that they cannot be recognized by palpation, that grow rapidly and that cause active symptoms.

In enucleation of fibro-myomata through the vagina, where it is necessary to incise the cervix, it would seem better surgery to make a semi-circular incision in front or behind the cervix, according to the location of the tumor or tumors and then to incise the anterior or posterior uterine wall than to make the bilateral incision, as recommended for the reasons that (1) the former operation gives a wider space for manipulation, and (2) produces less hæmorrhage.

Dr. JOSEPH B. BACON: In connection with Dr. Goldspohn's case of fibroid tumor of the uterus, I wish to report a case in which the tumor was fully as large as my two fists, beginning at the junction of the cervix with the body of the uterus on the anterior wall. The woman was forty-two years of age, and three months pregnant. This tumor had raised up the cervix and the os until it was all but impossible to find the os above the pubes. The fundus was deeply retroverted into the pelvis. The tumor was situated directly over the tubes, pushing forward and pressing on the bladder, so that it was impossible for this woman to proceed with pregnancy, and it would have been impossible to remove the tumor by the vagina. After having counsel in the case, it was decided to do a myomectomy and not remove the uterus. This was done. There was considerable shock following the operation, although it was surprising how easy it was to enucleate this tumor from the pregnant uterus with the tissues softened. There was practically no cutting except a small incision, and therefore hæmorrhage was slight. Following the shock of the operation I injected normal salt solution into the veins of her arms. The character of her pulse and severe shock led me to fear that I had not secured some blood vessels, and that there was an internal hæmorrhage taking place. A few hours afterward she began to abort; shock became still more severe, and after having counsel it was feared that there must be internal hæmorrhage. The patient was taken into the operating room, the abdominal incision opened, but the abdominal cavity was found free from blood, and the wound was clean and there was absolutely no hæmorrhage to account for the condition of the patient. I am satisfied that this woman would have had a better show and life would have been saved had we performed hysterectomy. I believe the first shock could have been overcome, but the abortion subsequently added to the fatal result.

Another case extremely interesting to me was that of a woman who had been married several years and was desirous of becoming a mother. She had multiple fibroids of the uterus. I called in consultation Dr. Byford, who assisted me in the operation. An abdominal incision was made and the uterus amputated at the cervix. I forgot the number of fibroids that we removed in this case, but there were all varieties, submucous, interstitial and subserous, and practically involving all the uterine tissue.

I hope Dr. Montgomery will keep track of those cases in which he has enucleated so many tumors, and at some future time tell us whether the women became pregnant and the course of pregnancy. If time proves that we may remove an almost indefinite number of tumors

by enucleation and yet have a uterus capable of becoming pregnant and bear a child to full time, much of the unpleasantness that the surgeon heretofore has had to contend with will have been removed. A new pleasure will be added to our work when we can say to a woman who is brave and womanly enough to desire to become a mother, "We can cure you and yet leave you in a condition that possibly will permit of you bearing a child."

Dr. A. H. FERGUSON: I do not intend to detail my own experience to-night in regard to the removal of myomatous tumors of the uterus. I rise to compliment Dr. Montgomery on his excellent paper and the conservative trend of it. I heartily approve of it. Stimulated some years ago by the able paper of Dr. Dudley, I commenced myomectomy soon afterwards. I shall only mention one case. The woman is about nine weeks pregnant on whom I performed an operation six months ago, removing nine myomatous growths through the vagina by the anterior route. Dr. Ries was present at the time. Most of these tumors were intramural, and irrespective of the line of the vessels I made an incision and removed them, suturing the wound with catgut. When the uterus is turned into the vagina primary hæmorrhage is controlled, and if suturing is done properly it is absolutely controlled.

I shall look forward with a good deal of interest to the outcome of this case that is now pregnant. It would be interesting to know the future history of Dr. Montgomery's cases in regard to pregnancy.

Dr. FRANK A. STAHL: I rise to ask Dr. Montgomery a question, which is also an obstetrical one. In 1881 Dr. Lusk reported a case of "Septicæmia and Death Following the Repeated Introduction of Sponge and Tupelo Tents," in which tent dilatation was resorted to in treating a case of multiple fibroids of the uterus. This paper coming from so eminent a source, I think had much to do with the opinion, now quite general in many places, that tupelo and laminaria tents are dangerous to use and especially so in obstetrical work. This is the more surprising since Dr. Lusk (1896 edition) speaks quite highly of the use of tupelo tents. I was pleased to hear Dr. Montgomery this evening refer to his use of the tupelo tents and apparently with such freedom. I have used them for some years and always with happy results, though, in discussions, I have been criticised for so doing. I would ask Dr. Montgomery whether he finds the use of tupelo tents exposes his patient to any particular danger. In Dr. Lusk's case (in which there was previously existing cellulitis and peritonitis) it was suggested at the time that the pernicious result, death on the sixth day, was not due to the tent, per

se, but rather to the dilatation under those circumstances. I never use sponge tents, as I consider them dangerous.

Dr. MOMTGOMERY (closing the discussion: I appreciate the earnest-manner in which the members have received my paper and the attention they have given it. I have been asked with regard to the extent to which this operation may be applied in the removal of fibroid growths. I endeavored in my paper to make plain that I did not propose to present a plan of treatment which would save the uterus in every case. There are patients in whom the extent of involvement of the uterus with fibroid growths is so great, the growth invading a large surface of the organ, possibly destroying the wall, that hysterectomy would be preferable, but there are cases similar to one from which this uterus has been removed, in which I believe the patient might have been left with a functionating uterus and saved the discomfort of the premature menopause by the removal of the growths. With such growths, by simply splitting the capsule, grasping the tumor with a double tenaculum, with a blunt dissector, we can turn out the mass through a very small opening and with but little hemorrhage. It is true, as Dr. Martin has pointed out to me in this uterus, there are quite a number of small growths and you will be astonished when you draw the organ up and feel over it, how easily you can discover them. There is no objection to making an incision at the point where it approaches nearest the surface, and then enucleating it. As soon as the incision is made down to the growth, it is seized with a double tenaculum, drawn up and turned out. These uteri that have growths within their cavities are just as amenable to treatment by external incision as where the tumor is situated in the uterine wall. It is important where a number of growths are present, to make the incisions in such a way that two or three tumors may be removed at the one incision so as not to cut up the uterus more than is absolutely necessary.

We have in a specimen shown here another fibroid which is situated in the anterior uterine wall. It is very difficult to take a specimen which has been in alcohol, removed for some time, and say how one would deal with it upon the living subject. It looks in this specimen, however, as if the line of demarkation between the growth and the uterus was indistinct and as if it had not been encapsulated. Our course with such a tumor would differ from the method of dealing with a tumor which had become mature. Such a tumor is sufficiently firm and encapsulated to permit its removal, and it could be removed through a vaginal incision instead of the abdominal. With regard to the case spoken of by Dr. Goldspohn, I should say that hysterectomy

was the preferable procedure. With the tumor occupying a deep situation in the pelvis or associated with pregnancy, the difficulty of controlling hæmorrhage and the possibility of subsequent abortion and infection associated with it would be dangerous, and would necessitate a more radical procedure. With regard to the point asked by Prof. Senn, the incision is made over the tumor at the point where the growth is most readily reached. In the fundus of the organ a vertical incision would be preferable to the transverse. At the lower part it may be more readily reached through the transverse incision. Suturing in such cases is done with catgut and depends entirely upon the depth of the incision. If the incision is slight and the tumor interstitial, with a thin covering, using a single row of sutures, taking a deep hold in the peritonæum so as to invert it. If the tumor is more deeply situated, use one row of sutures to bring the muscle together, and a second row, covering in a good layer of peritonæum. In those cases in which considerable enucleation is required and a large space from which oozing will occur, we may control the hæmorrhage by the introduction of catgut sutures, quilting the surfaces together, and finally covering with peritonæum.

None of the cases upon which I have operated have become pregnant. I can say nothing as to the influence of pregnancy in these cases subsequent to the operation. As I have said before, there is no one operation which can be applied to every case. Each case must be dealt with individually and that operation used which will be most efficient in relieving the condition. Our objects are: First, to save the life of the individual; second, to consider how much more we can save, and whether we can restore the organs to the normal state.

With regard to the use of tents, I must confess that my experience as a student led me to dread their use. When I was a student at the Jefferson Medical College, the professor of obstetrics and gynæcology was in the habit of using tents for the purpose of straightening the uterus. He used a sponge tent with a steel spring bent in the opposite direction to which the tent was bent, so when the tent became softened the steel spring would lift up and straighten the uterus. I have seen several patients die as a result of septic infection from the use of these tents. At a meeting of the American Gynæcological Society in Baltimore, Dr. Emmet spoke of a woman who made sponge tents in one of the hospitals of New York, and these were sold all over the country. It was found, however, that she used sponges that had been discarded after operations without taking any aseptic precautions, or exercising any special means of cleansing them. I should

say that tents so prepared would be very efficient in the production of septic conditions. With regard to laminaria tents, as I previously remarked, all these operative procedures must be done under the most thorough asepsis. The cervix and vagina should be cleansed as carefully as possible; before the tent is introduced it should be placed a few minutes in a saturated solution of iodoform and ether, then introduced into the canal, placing iodoform gauze about it to keep it in place. In those cases in which I wished to explore the cavity to determine the condition, or have used tents, I have not seen a single case of sepsis result. Of course I would not use a tent where the patient had previously suffered from some inflammatory condition of the uterine and pelvic structures, where parametric adhesions were present, as I would be afraid of the lighting up of additional trouble.

Official Transactions. C. S. BACON, Editor of Society.

THE

AMERICAN GYNÆCOLOGICAL

AND

OBSTETRICAL JOURNAL.

MAY, 1898.

BIRTH OF THE SECUNDINES.* †

A Clinical Study of the Relative Frequency of Methods of Birth of the Secundines and of the Relations of these Methods of Birth to Hæmorrhage; Based upon the Observation of 2,700 Cases.

By Ervin A. Tucker, M.D., New York.

Very few authorities agree in their statements about the ways in which the secundines are born, and of those who agree, most seem to have copied from their predecessors, instead of making original investigations, from which to deduce their own conclusions; those who disagree make exactly opposite statements, e. g., one authority (No. 1.) says that the fœtal surface of the placenta is usually born first, while another (No. 2.) says that the maternal surface is most frequently born first, while still another (No. 3.) states that the edge is most often born first. Such a variety of opinions is, to say the least, confusing. Some of our most consulted textbooks on obstetrics give inadequate statements about the hæmorrhages which may occur in the third stage of labor and immediately after the birth of the placenta, and very few, if any, seem

* Awarded the "Stevens Triennial Prize" of the College of Physicians and Surgeons, June, 1897.

† Read before the New York Obstetrical Society, March 8, 1898.

No. 1.—Vide Reference No. 1.

No. 2.—Vide Reference No. 3.

No. 3.—Vide Reference No. 2.

to have noticed any relation between the ways in which placentæ are born and these hæmorrhages.

There are so many discrepant opinions on these points that an investigation seems desirable. In this paper, based upon the observation and study of 2,700 labors and giving statistics taken from notes made as each case occurred, I shall endeavor to prove or disprove the statements which have been made by other observers in regard to the above-mentioned points, besides establishing what I believe to be new and important facts concerning the relations of placental birth to hæmorrhage. The number of cases studied is thought to be large enough to eliminate any errors which might arise from mere chance. Several writers have based their opinions upon the study of a very small number of cases—one writer even risks a statement after giving the statistics of seventeen cases only. It is obvious that in this way erroneous deductions can readily be made, but that the liability to wrong conclusions diminishes as the number of cases increases.

This paper has for its aim the investigation of the following four points, which are comprised in two *studies*:

Study I.

1. To determine in what way placentæ are most often born, when expressed by the *Credé method*, i. e., the *relative frequency of the methods of artificial birth* of the placenta.

2. To determine in what way placentæ are most often born, when expressed *spontaneously*, i. e., the *relative frequency of the methods of natural birth* of the placenta.

Study II.

3. To determine what the relation is between the different ways in which the secundines are born and the frequency of hæmorrhages (normal and excessive) in the third stage of labor and immediately post-partum, i. e., the *relative frequency of hæmorrhage* with different methods of placental birth.

4. To determine how much influence the different ways, in which the secundines are born, have upon the amount of blood lost in the third stage and immediately post-partum, i. e., the *relative quantity of hæmorrhage* with the different placental births.

In order to make the circumstances as nearly alike as possible in comparing the same points and yet to study the subject under as many different aspects as possible, in order to ascertain if what is true for one

class of cases is equally true for others, the 2,700 consecutive cases have been classified under the following headings:

I paræ full term
I paræ premature
X paræ full term
X paræ premature
} When placentæ were expressed by the Credé method.

I paræ full term
I paræ premature
X paræ full term
X paræ premature
} When placentæ were expressed spontaneously.

"Premature," as here used, is meant to apply to births occurring between seven calendar months of utero-gestation and full term. "X.-paræ" in the above list means women who have borne two or more children, i. e., it is simply an abbreviation for "multiparæ."

Study I.

Relative Frequency of Placental Births.

Clinically we see placentæ born in five different ways, whether expressed artificially by the Credé method or naturally by spontaneous efforts. The relative frequency of the five ways, in which placentæ present at the vulva and are born, has been observed in 2,710 placental births (partly Credé and partly spontaneous) to be as follows:

1028 = 37.9%	were born edge first, fœtal surface out, in	1024 labors
729 = 26.9%	were born fœtal surface first and out in	729 labors
602 = 22.2%	were born edge first, maternal surface out, in	599 labors
215 = 8.0%	were born maternal surface first and out in	213 labors
136 = 5.0%	were born edge first in	135 labors
2710		2700 labors

Throughout this paper the following abbreviations, based upon the above order, may be used:

"Plac. No. 1" means a placenta born edge first, fœtal surface out.
"Plac. No. 2" means a placenta born fœtal surface first and out.
"Plac. No. 3" means a placenta born edge first, maternal surface out.
"Plac. No. 4" means a placenta born maternal surface first and out.
"Plac. No. 5" means a placenta born edge first.

1. *Edge First Fœtal Surface Out.*—A placenta thus born presents its edge at the vulva and this edge is born first; *at the same time* the convex fœtal surface comes into view, while the folded-in maternal surface is hidden from sight, not only because it is folded in, but because it is covered by the membranes. The edge is often made especially noticeable, as it begins to protrude between the labia, by a white deposit which usually extends around the whole circumference of the placenta, thus making a strong contrast between the fœtal surface on one side and the maternal surface or membranes on the other side of this white line. Examination shows that the membranes are inverted (amnion outside, chorion inside) and that the cord is *not* in the bag of membranes. Frequently the amnion becomes detached from the chorion and more or less of it falls around the cord, in which case the loosened amnion is born with the cord on the fœtal surface, while the inverted chorion alone covers the maternal surface and forms the bag.



Fig. I. Placenta No. 1.

(See Fig. I.) Description of "Plac. No. 1" photograph: This shows a placenta being born edge first fœtal surface out. The convex fœtal surface, with the cord inserted almost centrally, is turned towards the mother's right thigh, while on the opposite side the inverted chorion is seen forming the bag, which bulges outward towards the left, because it

is filled with blood. The maternal surface is, of course, out of sight. Part of the amnion has been stripped from the fœtal surface and is seen hanging down over the perinæum. This placenta has been expressed by the Credé method and the hand still rests upon the fundus. It is worthy of note that the edge of the placenta is in the antero-posterior diameter of the outlet.

2. *Fœtal Surface First and Out.*—In this form of placental birth the convex fœtal surface presents at the vulva and is born first, while the maternal surface is folded in behind. The membranes have the same arrangement as above described, i. e., both inverted, or the amnion may be born on the fœtal surface with the cord, while only the chorion is inverted, forming a bag which is born last. So this method of placental birth agrees with Plac. No. 1. in having the fœtal surface convex and the same arrangement of the membranes and cord, but differs in having the centre of the fœtal surface born first, while the former has the



Fig. II. Placenta No. 2.

edge born first. (See Fig. II.) Description of "Plac. No. 2" photograph: This represents a placenta, which has been born fœtal surface first and out, just being caught in the hand of the accoucheur. The cord is inserted centrally and was born with the central part of the placenta first. The bag here is formed of both membranes, which are inverted with

the amnion outside. On the upper part of this bag a dark spot shows where a bloodclot is adherent to the chorion. The long diameter of the placenta, i. e., its widest part, is seen to be in the transverse of the outlet.

3. *Edge First Maternal Surface Out.*—In this, as in Plac. No. 1, the edge presents at the vulva and is born first, but the maternal surface is convex and shows itself with the edge, while the fœtal surface is folded in and is thereby concealed from view. The arrangement of the membranes varies greatly—the amnion and chorion together may cover the fœtal side and form a bag, with the amnion inside of the chorion, while the funis, springing from the fœtal surface, turns over the edge of the bag and lies, as it passes downward, between the chorion and the vaginal wall; or the amnion, clinging more or less about the cord, may lie on the fœtal side, while the chorion, which has become partially or completely inverted, covers the maternal surface; or, more rarely, the

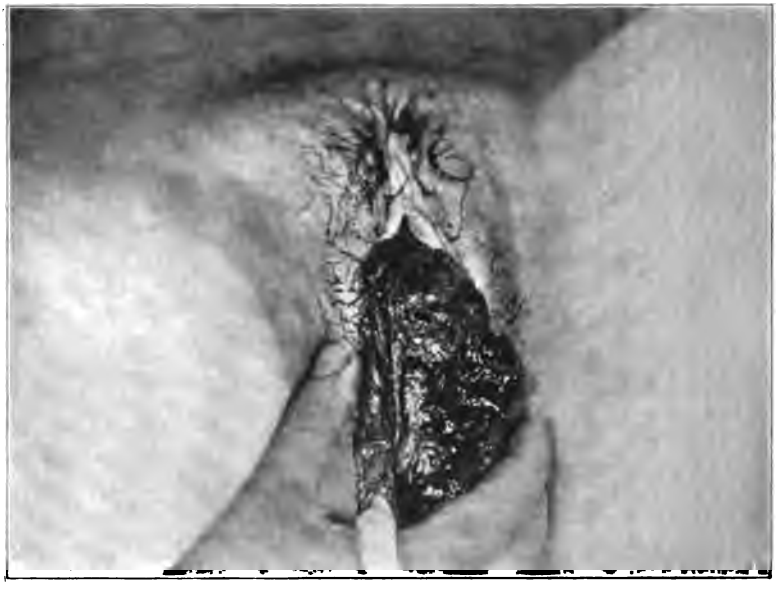


Fig. III. Placenta No. 3.

amnion adheres to the inverted chorion and with it covers the convex maternal surface, so that at first sight it may be difficult to recognize which is the maternal surface. In this last-named arrangement the amnion, of course, still covers the fœtal surface, but this portion of the amnion, being folded in with the fœtal surface, is invisible till a large

part or all of the placenta has been born. This method is the opposite of Plac. No. 1. (See Fig. III.)

Description of "Plac. No. 3" photograph: This placenta was photographed just as it was being born edge first maternal surface out. The convex maternal surface is turned towards the mother's left thigh. The edge, a little to the right of the median line, is marked by a whitish deposit. The funis is seen passing into the vagina on the right to reach the fœtal surface. The membranes are wholly on the fœtal side, so the maternal surface is exposed. The edge of this placenta, which was expressed by the Credé method, is being born in the antero-posterior diameter of the outlet.

4. *Maternal Surface First and Out.*—This birth is the opposite of fœtal surface first and out. The convex maternal surface at or very near its centre presents at the vulva and is born first, while the fœtal surface is folded in behind, covered by the membranes, which form a



Fig. IV. Placenta No. 4.

bag having the chorion outside, i. e., the membranes are not inverted. The cord, starting from the fœtal surface, turns over the edge of the bag and lies between the chorion and vagina. Before a placenta can be born in this way, it must turn more or less in the uterus or upper part of the vagina, in order to bring its maternal surface lowest, except in a

case of placenta prævia centralis where it is already lying in a position which favors this method of birth. (See Fig. IV.)

Description of "Plac. No. 4" photograph: This placenta has just been born maternal surface first and out. The cord is seen posteriorly on the right, where it disappears beneath the placenta. The dark mass below the placenta on the bed is escaping blood. It is noteworthy that in the births of Plac. No. 1 and Plac. No. 2 there was no blood escaping, while in this Plac. No. 4 method the hæmorrhage is evident, though the photographs were taken almost instantaneously. The widest part of the placenta is seen to be in the antero-posterior diameter of the outlet.

5. *Edge First* (both surfaces out). When the placenta is born "edge first," the fœtal and maternal surfaces are equally exposed, so that, as the edge presents at the vulva and is born first, the method belongs neither to Plac. No. 1 nor to Plac. No. 3 alone, but has the char-



Fig. V. Placenta No. 5.

acteristics of both these methods equally divided. As this method, therefore, does not belong to any of the others, it must be classed by itself. Sometimes a part of the maternal surface away from the edge is folded in and another part folded out, while still another part is folded in; the same thing in reverse order then obtains on the fœtal side, i. e.,

more or less of the placenta is fluted. Some of the placentæ, finally born edge first, no doubt start from the uterus or upper part of the vagina as edge first fœtal (or maternal) surface out, and then, in passing downward, are compressed and folded as just described. That placentæ born in this way from a sort of middle class between Plac. No. 1 and Plac. No. 3 will be more fully shown later in Study II. (See Fig. V.)

Description of "Plac. No. 5" photograph: This shows a placenta being born edge first. The left hand of the accoucheur has expressed the placenta by the Credé method and his right hand is just receiving it. The convex maternal surface is turned towards the mother's right thigh and the equally convex fœtal surface towards the left thigh. The chorion has been torn from the edge of the placenta and a large part of the amnion has been born with the cord and lies across the fingers of the accoucheur. The cord passes beneath the placenta and then turns to the left to reach the fœtal surface. Birth of the amnion with the cord is

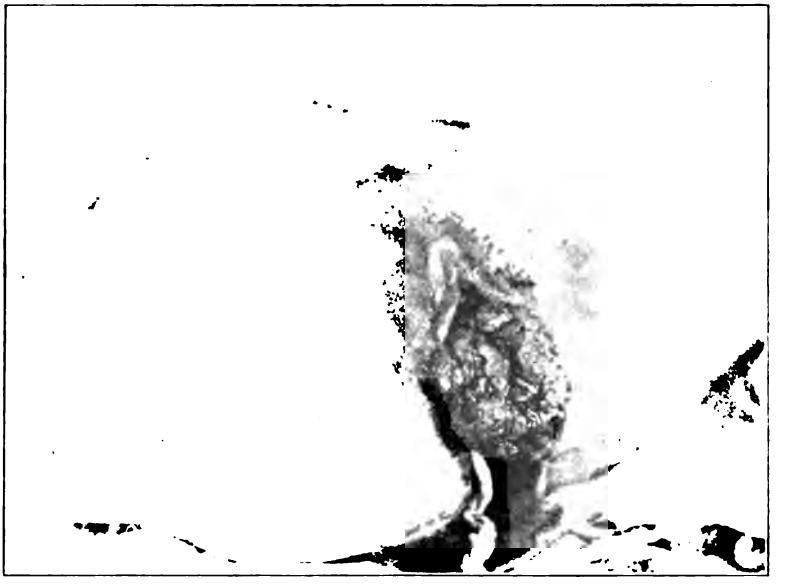


Fig. VI.

most often seen when the fœtal surface is born out, while the escape of blood during the birth of the placenta (shown in the photograph as a dark mass beneath the hand) is characteristic of the birth of the maternal surface out. As both of these events are apt to occur in cases of "edge first," another proof is established that Plac. No. 5 forms a mid-

dle class between Plac. No. 1 and Plac. No. 3. The edge of this placenta has been born in the right oblique of the outlet.

The long diameters of placentæ can be born in the antero-posterior or oblique or transverse diameter of the outlet, as is illustrated by the photographs of Plac. No. 1, Plac. No. 5, and Plac. No. 2, respectively. By far the greatest number is born in the antero-posterior diameter, a few in the oblique, and very few in the transverse.

A phenomenon, which has been observed repeatedly is that a placenta may present in one way and be finally born in another, i. e., the presentation of the placenta may change during its birth or as a part of the act of birth. Fig. VI. is a photograph to illustrate this point—this placenta presented edge first fœtal surface out, but, instead of continuing that method of birth, the edge is pulled over toward the left and kept from advancing by the chorion (which is probably caught by the cervix), while the right side of the placenta advances because of pressure from above; when the right side has advanced enough to be on the same plane with the left, the placenta lies as if the original presentation had been fœtal surface first and out. The photograph shows the placenta, when the turn from edge first fœtal surface out to fœtal surface first and out is about half completed; the amnion has already been born and the inverted chorion forms the bag. When such a rotation occurs, the placenta may be said to have had two presentations—a primary and a secondary. Plac. No. 1 can thus change into Plac. No. 2, or the reverse; and Plac. No. 3 into Plac. No. 4, or the reverse; or Plac. No. 1 or Plac. No. 3 into Plac. No. 5, or the reverse. Many placentæ, which present at the os uteri in one way, present differently when born at the vulva. Not only can this change in presentation be seen, as it occurs in the vulva, but it can easily be felt, if the fingers are gently pressed against the placenta, as it descends through the vagina. Only the primary vulvar presentation has been noted in the statistics given in this paper.

Twenty-seven hundred labors were studied, but 2,710 placental births were observed, because, of the 25 cases of twins occurring in the 2,700 labors, 10 had two separate placentæ a greater or less distance apart, while the other 15 had either only one placenta for both children or two placentæ so closely joined as to constitute only one placental birth. Thirteen of the twin cases were in I paræ and 12 in X paræ. The 10 pairs of separate placentæ were born as follows:

One I para, premature (7 months), Credé—both placentæ born edge first fœtal surface out.

Two X paræ, full term, Credé—both placentæ born edge first fœtal surface out.

One X para, full term, Credé—both placentæ born edge first maternal surface out.

One X para, premature (8½ months), Credé—both placentæ born edge first maternal surface out.

Two X paræ, full term, spontaneous—both placentæ born maternal surface first and out.

One I para, full term, Credé—both placentæ born edge first.

But in one case, a I para, premature (7½ months), Credé—in which the two placentæ were 10 cm. apart, the placenta of the first child was born edge first fœtal surface out, and the placenta of the second child edge first maternal surface out; a curious fact observed was that the second child's placenta was born first, then the first child's placenta. In another case—I para, full term, Credé—in which the two placentæ were 12 cm. apart, the first child's placenta was born edge first maternal surface out, and the second child's edge first fœtal surface out; in this case, also, the first child's placenta was born last and the second child's first.

Twenty-five hundred and sixty-one of the 2710 placentæ were expressed by the Credé method, and 149 came away spontaneously. All the placentæ, with one exception (No. 1) were born while the patient was lying upon her back. When the Credé method was used at the end of 15 or 20 minutes, the placenta was born with the first attempt at expression in by far the largest number of cases, but occasionally two attempts, and in a very few cases three or four attempts were necessary; in all these cases, in which the first attempt failed, the fault lay in the feebleness of the uterine contraction—as soon as this organ was excited to contract, the expression was successful. In all but three of the 149 spontaneous cases the placenta was expelled from the uterus into the vagina within 20 minutes after the birth of the child; (No. 2) in two cases the third stage lasted 22 minutes, and in one case 35 minutes. In about one-half of the spontaneous cases the placenta was expelled from the vagina without any interference whatever, but in the remainder pressure on the fundus was used to hasten expulsion.

In 8 cases more or less traction was made on the cord—in 5 cases accidentally, but in the other 3 traction was combined with the Credé

No. 1.—Patient on her left side—Credé expression, edge first, fœtal surface out.

No. 2.—See Reference No. 14, last part.

method. It is interesting to note the result of this cord-traction upon the ways in which the placentæ were born:

1. I para, full term: the cord was so tight around the child's neck that it snapped during an attempt to slip it over the head; marginal insertion of the cord; placenta expressed, edge first fœtal surface out, by the Credé method.

2. I para, full term: when the child had been born as far as the navel, the cord became taut and considerable traction had to be made before delivery of the body could be completed; cord, inserted laterally, was only 37 cm. long; placenta born edge first fœtal surface out, by Credé expression.

3. X para, full term: cord passed between the child's thighs, besides being once around its neck—as the child was born, breech first, the cord was torn from its placental attachment; marginal insertion of the cord; placenta born edge first fœtal surface out, by Credé expression.

4. X para, full term: moderate traction was made on the cord during expression by the Credé method; central insertion of cord; placenta born edge first fœtal surface out.

5. I para, full term: child was born while patient was standing; the cord broke at its placental attachment, when the child fell to the floor, leaving all of the cord attached to the child; lateral insertion of cord; placenta expressed edge first fœtal surface out by the Credé method.

6. X para, full term; this patient, while standing, gave birth to the child, which fell to the floor, snapping the cord 4.5 cm. from the navel; central insertion of cord; Credé expression of the placenta edge first fœtal surface out.

7. I para, premature: strong traction was made on the cord during Credé expression; central insertion of cord; placenta born fœtal surface first and out.

8. X para, full term; lateral insertion of cord; in spite of strong traction on the cord during the Credé expression, (No. 1) the placenta was born edge first maternal surface out.

Though 8 cases are too few to base any conclusions upon, it is noteworthy that 7 of these placentæ were born with the fœtal surface out. Traction upon the cord is used so seldom at the present day for delivering the placenta, that there is little chance to study the results of this method, but no doubt Playfair (No. 2) is right in his statement that

No. 1.—See Reference No. 8.

No. 2.—Playfair's System of Midwifery, 4th American edit., p. 292.

"the fœtal surface and root of the cord are the parts which appear first, when the placenta is removed by traction."

The following tables will show the relative frequency of the five different methods of placental birth in the different classes of cases. By a study of these tables and by contrasting such factors as the Credé expression with spontaneous expression, mature with premature delivery, and primiparity with multiparity, we shall obtain a better appreciation of the influences which favor each of the five ways of placental birth. Placental delivery by the Credé method will be studied first, then spontaneous delivery.

Relative Frequency of Placental Births by Credé Expression.

The following five tables, each comprising four classes of cases, show the relative frequency of the five methods of placental birth in 2561 cases, in which the Credé method of expression was used:

TABLE 1.

Edge First, Fœtal Surface Out (979 cases).

462 were I paræ, full term.
53 were I paræ, premature.
429 were X paræ, full term.
35 were X paræ, premature.

TABLE 2.

Fœtal Surface First and Out (703 cases).

313 were I paræ, full term.
44 were I paræ, premature.
312 were X paræ, full term.
34 were X paræ, premature.

TABLE 3.

Edge First, Maternal Surface Out (555 cases).

230 were I paræ, full term.
40 were I paræ, premature.
249 were X paræ, full term.
36 were X paræ, premature.

TABLE 4.

Maternal Surface First and Out (194 cases).

57 were I paræ, full term.
25 were I paræ, premature.
90 were X paræ, full term.
22 were X paræ, premature.

TABLE 5.

Edge First (130 cases).

62 were I paræ, full term.
10 were I paræ, premature.
51 were X paræ, full term.
7 were X paræ, premature.

The following tables are made up from the preceding:

TABLE 6.

I paræ, full term, Credé (1124 cases).

462 = 41.1% were born edge first, fœtal surface out.
313 = 27.9% were born fœtal surface first and out.
230 = 20.5% were born edge first, maternal surface out.
57 = 5.0% were born maternal surface first and out.
62 = 5.5% were born edge first.

This table shows the strong influence which primiparity and maturity have in favoring Plac. No. 1, and, to a less degree, Plac. No. 2, at the expense of Plac. No. 3 and Plac. No. 4, which are reduced in this class of cases to their lowest percentages, so that the frequency of Plac. No. 4 becomes actually less than that of Plac. No. 5—an occurrence found in no other class of cases.

TABLE 7.

I paræ, premature, Credé (172 cases).

53 = 30.8% were born edge first, fœtal surface out.
44 = 25.6% were born fœtal surface first and out.
40 = 23.3% were born edge first, maternal surface out.
25 = 14.5% were born maternal surface first and out.
10 = 5.8% were born edge first.

In this table is seen the influence of prematurity in increasing the frequency of Plac. No. 3 and Plac. No. 4:

TABLE 8.

X paræ, full term, Credé (1131 cases).

429 = 38.0% were born edge first, fœtal surface out.
312 = 27.6% were born fœtal surface first and out.
249 = 22.0% were born edge first, maternal surface out.
90 = 7.9% were born maternal surface first and out.
51 = 4.5% were born edge first.

This table shows the tendency of full term expulsion to increase the frequency of Plac. No. 1 and Plac. No. 2, as compared with the follow-

ing table, in which all the conditions are the same, except that the cases were premature. It also shows the tendency of multiparity to increase the frequency of Plac. No. 3 and Plac. No. 4, as compared with Table 6, in which all the conditions are the same, except that the patients were I paræ.

The following table shows the combined influence of multiparity and prematurity in increasing the frequency of Plac. No. 3 and Plac. No. 4, so that the percentages of Plac. No. 1 and Plac. No. 2 are respectively smaller, and the percentages of Plac. No. 3 and Plac. No. 4 are respectively larger than in any of the preceding three tables:

TABLE 9.

X paræ, premature, Credé (134 cases).

35 = 26.1% were born edge first, fœtal surface out.
34 = 25.4% were born fœtal surface first and out.
36 = 26.9% were born edge first, maternal surface out.
22 = 16.4% were born maternal surface first and out.
7 = 5.2% were born edge first.

Comparison of the above four tables, therefore, shows that full term primiparæ are most apt to have their placentæ born edge first fœtal surface out, while premature multiparæ have most placentæ born edge first maternal surface out. Placentæ are born edge first with nearly the same degree of frequency in all four classes of cases—only 1.3 per cent. difference between the lowest and highest percentages.

The exact influence exerted by each of the two sets of factors (primiparity and multiparity, and full term and premature births) has now been brought out to the fullest possible degree, showing that

I parity and maturity favor Plac. No. 1 and Plac. No. 2.

X parity and prematurity favor Plac. No. 3 and Plac. No. 4.

Now, by adding together all the full term cases in one list and all the premature cases in another, tables of average percentages for full term and premature cases are obtained:

TABLE 10.

Full term, Credé (2255 cases).

891 = 39.5% were born edge first, fœtal surface out.
625 = 27.7% were born fœtal surface first and out.
479 = 21.3% were born edge first, maternal surface out.
147 = 6.5% were born maternal surface first and out.
113 = 5.0% were born edge first.

TABLE II.

Premature, Credé (306 cases).

88 = 28.8% were born edge first, fœtal surface out.
78 = 25.5% were born fœtal surface first and out.
76 = 24.8% were born edge first, maternal surface out.
47 = 15.3% were born maternal surface first and out.
17 = 5.6% were born edge first.

If the full term and premature cases occurring in I paræ are added together, as are also the full term and premature cases of X paræ, we shall obtain the following tables of average percentages for I paræ and X paræ:

TABLE 12.

I paræ, Credé (1296 cases).

515 = 39.7% were born edge first fœtal surface out.
357 = 27.6% were born fœtal surface first and out.
270 = 20.8% were born edge first, maternal surface out.
82 = 6.3% were born maternal surface first and out.
72 = 5.6% were born edge first.

TABLE 13.

X paræ, Credé (1265 cases).

464 = 36.7% were born edge first fœtal surface out.
346 = 27.4% were born fœtal surface first and out.
285 = 22.5% were born edge first, maternal surface out.
112 = 8.8% were born maternal surface first and out.
58 = 4.6% were born edge first.

Study of the last four tables shows that in general the influence of

TABLE 14.

Maturity increases frequency of Plac. No. 1, 10.7%, of Plac. No. 2, 2.2%
I parity increases frequency of Plac. No. 1, 3.0%, of Plac. No. 2, 0.2%
Prematurity increases frequency of Plac. No. 3, 3.5%, of Plac. No. 4, 8.8%
X parity increases frequency of Plac. No. 3, 1.7%, of Plac. No. 4, 2.5%

The above table shows merely the *relative* tendency of the four factors named to favor one or another form of placental birth.

In the following list all four factors are present, the influence of maturity and primiparity tending to neutralize the influence of prematurity and multiparity, so that the result of this combination is, for the

Credé method of expression, an average of the ways in which placentæ may be born:

TABLE 15.

Credé Expression of 2561 Placentæ.

979 = 38.2% were born edge first, fœtal surface out.
703 = 27.4% were born fœtal surface first and out.
555 = 21.7% were born edge first, maternal surface out.
194 = 7.6% were born maternal surface first and out.
130 = 5.1% were born edge first.

Relative Frequency of Placental Births by Spontaneous Expression.

The following five tables state the methods of birth of 149 placentæ expressed spontaneously.

TABLE 16.

Edge First, Fœtal Surface Out (49 cases).

16 were I paræ, full term.
2 were I paræ, premature.
25 were X paræ, full term.
6 were X paræ, premature.

TABLE 17.

Fœtal Surface First and Out (26 cases).

4 were I paræ, full term.
0 were I paræ, premature.
20 were X paræ, full term.
2 were X paræ, premature.

TABLE 18.

Edge First, Maternal Surface Out (47 cases).

9 were I paræ, full term.
4 were I paræ, premature.
26 were X paræ, full term.
8 were X paræ, premature.

TABLE 19.

Maternal Surface First and Out (21 cases).

0 were I paræ, full term.
2 were I paræ, premature.
16 were X paræ, full term.
3 were X paræ, premature.

TABLE 20.

Edge First (6 cases).

0 were I paræ, full term.
1 was I para, premature.
5 were X paræ, full term.
0 were X paræ, premature.

From the above tables the following are prepared:

TABLE 21.

I parœ, full term, spontaneous (29 cases).

16 = 55.2% were born edge first, fœtal surface out.
4 = 13.8% were born fœtal surface first and out.
9 = 31.0% were born edge first, maternal surface out.
0 were born maternal surface first and out.
0 were born edge first.

This table seems to show that the influence of primiparity and maturity in increasing the frequency of Plac. No. 1 is even stronger in spontaneous than in Credé births, but the small number of observations given here, as well as in Tables 22 and 24 given below, invalidate to a great degree any conclusions which might be drawn. This table shows that spontaneous expression tends to increase the frequency of Plac. No. 3 and that the edge (disregarding which surface of the placenta is out), is born first in over 86 per cent. of the cases—this tendency to edge first, irrespective of the surface out, will be evident in all the tables of spontaneous expression.

TABLE 22.

I parœ, premature, spontaneous (9 cases).

2 = 22.2% were born edge first, fœtal surface out.
0 were born fœtal surface first and out.
4 = 44.5% were born edge first, maternal surface out.
2 = 22.2% were born maternal surface first and out.
1 = 11.1% was born edge first.

No correct conclusions can be drawn from such a small number of cases.

The following table demonstrates well the combined influence of multiparity and spontaneous expression in increasing the frequency of Plac. No. 3 and Plac. No. 4, thereby reducing the frequency of Plac. No. 1 and Plac. No. 2, while the frequency of Plac. No. 5 remains about the same as in Credé cases:

TABLE 23.

X parœ, full term, spontaneous (92 cases).

25 = 27.2% were born edge first, fœtal surface out.
20 = 21.7% were born fœtal surface first and out.
26 = 28.3% were born edge first, maternal surface out.
16 = 17.4% were born maternal surface first and out.
5 = 5.4% were born edge first.

TABLE 24.

X parœ, premature, spontaneous (19 cases).

6 = 31.6% were born edge first, fœtal surface out.
2 = 10.5% were born fœtal surface first and out.
8 = 42.1% were born edge first, maternal surface out.
3 = 15.8% were born maternal surface first and out.
0 were born edge first.

In three of the above four tables Plac. No. 3 is more frequent than Plac. No. 1—this occurred but once in the Credé tables (see Table 9). The strong tendency of spontaneous expression to increase the frequency of Plac. No. 3 and Plac. No. 4 is shown in all four classes of cases.

The two tables below are made up from the preceding by adding together all the full term cases, for comparison with all the premature cases:

TABLE 25.

Full term, spontaneous (121 cases).

41 = 33.9% were born edge first, fœtal surface out.
24 = 19.9% were born fœtal surface first and out.
35 = 28.9% were born edge first, maternal surface out.
16 = 13.2% were born maternal surface first and out.
5 = 4.1% were born edge first.

TABLE 26.

Premature, spontaneous (28 cases).

8 = 28.6% were born edge first, fœtal surface out.
2 = 7.1% were born fœtal surface first and out.
12 = 42.8% were born edge first, maternal surface out.
5 = 17.9% were born maternal surface first and out.
1 = 3.6% was born edge first.

By comparing the above two tables we see that maturity favors Plac. No. 1 and Plac. No. 2, and that prematurity favors Plac. No. 3 and Plac. No. 4, just as was observed in the Credé cases.

The following tables result from combining all the primiparous and then all the multiparous cases:

TABLE 27.

I parœ, spontaneous (38 cases).

18 = 47.4% were born edge first, fœtal surface out.
4 = 10.5% were born fœtal surface first and out.
13 = 34.2% were born edge first, maternal surface out.
2 = 5.3% were born maternal surface first and out.
1 = 2.6% was born edge first.

TABLE 28.

X parœ, spontaneous (111 cases).

31 = 28.0% were born edge first, fœtal surface out.
22 = 19.8% were born fœtal surface first and out.
34 = 30.6% were born edge first, maternal surface out.
19 = 17.1% were born maternal surface first and out.
5 = 4.5% were born edge first.

Comparison of these two tables shows that primiparity favors Plac. No. 1 and Plac. No. 3, and multiparity, Plac. No. 2 and Plac. No. 4, results which differ from those observed in Credé cases (see Tables 12, 13 and 14), in that primiparity seems to favor Plac. No. 3 and multiparity Plac. No. 2. As is shown by the tables given below, these exceptions are apparent rather than real, being due to the tendency of spontaneous expression to increase the frequency of edge first (irrespective of surface out)—a tendency so strong that it more than neutralizes the tendency of primiparity to favor Plac. No. 2; how strong this tendency is, can be easily demonstrated by adding together in Table 27 all the placentæ which were born edge first (irrespective of surface out), thus:

TABLE 29.

I parœ, spontaneous (38 cases).

32 = 84.2% were born edge first (= Plac. No. 1+Plac. No. 3+Plac. No. 5).
4 = 10.5% were born fœtal surface first (and out).
2 = 5.3% were born maternal surface first (and out).

That primiparity favors, even in spontaneous cases, the birth of the fœtal surface out, is shown by the following table, which is obtained by adding together Plac. No. 1 and Plac. No. 2, and then Plac. No. 3 and Plac. No. 4, in Table 27:

TABLE 30.

I parœ, spontaneous (38 cases).

22 = 57.9% were born fœtal surface out = (Plac. No. 1 + Plac. No. 2).
15 = 39.5% were born maternal surface out = (Plac. No. 3 + Plac. No. 4).
1 = 2.6% was born edge first = (Plac. No. 5).

And that multiparity favors, even in these spontaneous cases, the birth of the maternal surface out, can be seen by comparing Table 30 with the following, which is made up from Table 28:

TABLE 31.

X parœ, spontaneous (111 cases).

53 = 47.75% were born fœtal surface out = (Plac. No. 1 + Plac. No. 2).
53 = 47.75% were born maternal surface out = (Plac. No. 3 + Plac. No. 4).
5 = 4.5% were born edge first = (Plac. No. 5).

By combining all the factors the following average is obtained:

TABLE 32.

Spontaneous Expression of 149 Placentæ.

49 = 32.9% were born edge first, fœtal surface out.
26 = 17.4% were born fœtal surface first and out.
47 = 31.6% were born edge first, maternal surface out.
21 = 14.1% were born maternal surface first and out.
6 = 4.0% were born edge first.

From this it is seen that the order of frequency for spontaneous cases differs from the order of frequency for Credé cases (see Table 15), in that Plac. No. 3 is more frequent than Plac. No. 2.

Credé Expression.—Spontaneous Expression.

In order to facilitate comparison of the general results obtained, when the Credé and spontaneous methods are employed, Tables 15 and 32 are repeated here:

TABLE 33.

Credé.	*Spontan.*
979 = 38.2%	49 = 32.9% were born edge first, fœtal surface out.
703 = 27.4%	26 = 17.4% were born fœtal surface first and out.
555 = 21.7%	47 = 31.6% were born edge first, maternal surface out.
194 = 7.6%	21 = 14.1% were born maternal surface first and out.
130 = 5.1%	6 = 4.0% were born edge first.

From these tables, in which the influence of maturity and primiparity tends to neutralize the influence of prematurity and multiparity, it is seen that the Credé method increases the frequency of Plac. No. 1, Plac. No. 2 and Plac. No. 5, while the spontaneous method increases the frequency of Plac. No. 3 and Plac. No. 4.

If all the placentæ born fœtal surface out (i. e., Plac. No. 1+Plac. No. 2) and all those born maternal surface out (i. e., Plac. No. 3+Plac. No. 4) are compared under the two methods of expression, another illustration of the opposite influence of the Credé and spontaneous methods will be obtained:

TABLE 34.

Credé.	*Spontan.*
1682 = 65.6%	75 = 50.3% were born fœtal surface out.
749 = 29.3%	68 = 45.7% were born maternal surface out.
130 = 5.1%	6 = 4.0% were born edge first.

The importance of this opposite tendency of the two methods of expression, as well as the importance of the opposite tendencies, which

are manifested by maturity and prematurity and by primiparity and multiparity, will be better appreciated in Study II.

Maturity.—Prematurity.

A comparison of all the mature with all the premature placental births gives the following results:

TABLE 35.

Full term.	*Premature.*
932 = 39.2%	96 = 28.7% were born edge first, fœtal surface out.
649 = 27.3%	80 = 24.0% were born fœtal surface first and out.
514 = 21.6%	88 = 26.3% were born edge first, maternal surface out.
163 = 6.9%	52 = 15.6% were born maternal surface first and out.
118 = 5.0%	18 = 5.4% were born edge first.

In the above list the influence of the Credé method and primiparity tends to neutralize the influence of the spontaneous method and multiparity. From the above comparison we see that maturity tends to increase the frequency of Plac. No. 1 and Plac. No. 2, but that prematurity tends to increase the frequency of Plac. No. 3 and Plac. No. 4 and Plac. No. 5.

The following table shows the frequency of the birth of the fœtal and maternal surfaces out under the same conditions:

TABLE 36.

Full term.	*Premature.*
1581 = 66.5%	176 = 52.7% were born fœtal surface out.
677 = 28.5%	140 = 41.9% were born maternal surface out.
118 = 5.0%	18 = 5.4% were born edge first.

Primiparity.—Multiparity.

TABLE 37.

I parœ.	*X parœ.*
533 = 39.9%	495 = 36.0% were born edge first, fœtal surface out.
361 = 27.1%	368 = 26.7% were born fœtal surface first and out.
283 = 21.2%	319 = 23.2% were born edge first, maternal surface out.
84 = 6.3%	131 = 9.5% were born maternal surface first and out.
73 = 5.5%	63 = 4.6% were born edge first.

By the above arrangement of all the primparous and multiparous placental births the influence of the Credé method and maturity tends to neutralize the influence of the spontaneous method and prematurity, leaving primiparity to be contrasted with multiparity. Thus it is

shown that I parity increases the frequency of Plac. No. 1 and Plac. No. 2 and Plac. No. 5, and that X parity increases the frequency of Plac. No. 3 and Plac. No. 4.

The following table allows a similar comparison with special reference to the birth of the fœtal and maternal surfaces out:

TABLE 38.

I parœ.	*X parœ.*	
894 = 67.0%	863 = 62.7%	were born fœtal surface out.
367 = 27.5%	450 = 32.7%	were born maternal surface out.
73 = 5.5%	63 = 4.6%	were born edge first.

Relative Frequency of the Birth of the Surfaces and Edge, according to the Views of Winckel and Duncan.

Having shown the relative frequency of the five different methods of placental birth as they are actually seen clinically, and having studied the influence of various factors upon this frequency, I think it is worth while, before leaving this subject, to investigate why such a careful observer as Winckel says that the fœtal surface is born first in three-fourths of all cases, while an equally competent observer, Duncan, says that the edge is usually born first. At first thought these two statements seem to contradict each other, but on further consideration, it will be seen that each is right, from his own standpoint, and wrong from the other's. Both Winckel and Duncan based their statements upon the observation of spontaneously-ended labors, so only spontaneous cases will be made use of in the following discussion.

Winckel's View.

Winckel, in his "Lehrbuch der Geburtshülfe," 1st edit., 1889, page 137, after describing how the placenta is separated from the uterine wall, so that the membranes become inverted and the fœtal surface bulged downward and made to present, says, "The placenta is then folded apparently on its transverse diameter; we must admit, however, that, according as one or the other part of the central portion becomes loosened somewhat more slowly than some other part, the placenta may for this reason make a spiral turn around its vertical diameter and be born enveloped in the membranes," i. e., Winckel makes no distinction between the placenta being born fœtal surface first and out and edge first fœtal surface out, but classes these two ways together and says that in 100 cases 76 were thus born. So, by adding together the

cases in which these two methods of placental birth occurred, i. e., Plac. No. 1 and Plac. No. 2, as given in the tables of spontaneous cases, we shall obtain statistics analogous to Winckel's.

Duncan's View.

Duncan's article in the *Edinburgh Medical Journal*, April, 1871, "On the Mechanism of the Expulsion of the Placenta," gives this statement on page 901: "My own numerous observations satisfy me that inversion of the placenta, or its folding upon itself transversely to the passage, or the presentation of its fœtal surface, is a very rare occurrence." On page 902 he says, "It [the placenta] comes edgeways." In speaking of the illustration which is given in his article, he says that the picture represents "a placenta folded upon its fœtal surface," i. e., maternal surface out, to use the phrase adopted in this paper. But the special point which Duncan repeatedly emphasizes throughout his article is that the placenta is usually born edge first. He states no exact number of observations, but says they were "numerous." So, in order to arrange our statistics to correspond to Duncan's view, we must add together the cases of Plac. No. 1 and Plac. No. 3 and Plac. No. 5, as given in the tables of spontaneous cases.

The following table is made up on the plans just mentioned, i. e., of the 149 spontaneous expulsions of placentæ, all those, in which the fœtal surface was born out, are classed together according to Winckel's view, and all those born edge first (without regard to surfaces) are classed together according to Duncan's view:

TABLE 39.

Winckel's View.

75 = 50.3% born fœtal surface first.
68 = 45.7% born maternal surface first.
6 = 4.0% born edge first.

149

Duncan's View.

102 = 68.5% born edge first.
26 = 17.4% born fœtal surface first.
21 = 14.1% born maternal surface first.

149

Thus it is shown that according to one view the fœtal surface is born first much more often than the edge, while from the other view the

same cases show that the edge is born first much more often than the fœtal surface. By recognizing five methods of placental birth such discrepancies of opinion and statement are avoided.

The 2,561 cases of Credé expression, arranged so as to show the relative frequency of the birth of the surfaces and the edge, make this instructive tabulation:

TABLE 40.

1682 = 65.6% born fœtal surface out.
749 = 29.3% born maternal surface out.
130 = 5.1% born edge first.

(To be continued.)

TUBO-OVARIAN HÆMORRHAGE, RESEMBLING RUPTURED ECTOPIC PREGNANCY.*

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Since systematic and scientific study of ectopic pregnancy began to occupy the attention of the profession all cases of pelvic hæmorrhage have been of deep interest, whether it was within or without the peritonæal cavity and whether in greater or less amount.

The pendulum unfortunately makes very long sweeps in medicine, and here, as well as elsewhere, we find it exhibiting this unscientific feature. A few years back pelvic hæmatocele was a condition that every practitioner appeared to occasionally meet, and many were the supposed causes of it. When the study of tubal pregnancy was so universally taken up some of the most aggressive investigators told us to search in every case of pelvic hæmatocele and we would find a ruptured tubal pregnancy. This dictum, though not endorsed by all observers, found a ready following, and to this time the majority of students of pelvic diseases have accepted it.

Many others, while not able to disprove it, have, nevertheless, felt it to be too sweeping and have quietly awaited for the proper stroke of the pendulum of scientific truth as to the actual causes of pelvic

* Read at meeting Southern Surgical and Gynæcological Society at St. Louis, Nov. 8, 1897.

hæmorrhage of whatever form. Those who do much abdominal surgery ofttimes meet in women with cases of pelvic hæmorrhage into the peritonæal cavity in which the diagnosis of ruptured tubal pregnancy does not seem to be justified, except by the blind following of the inexorable decision that it must be due to that cause.

There have been many cases, too, in which a presumptive diagnosis of ruptured tubal pregnancy was made—cases in which such symptoms as shock, sharp pain, irregularity of menstruation even to amenorrhœa, the presence of a small tumor in the pelvis, and even death—and in which an autopsy has revealed no pregnancy, but, instead, a hæmorrhage from a Fallopian tube, an ovary or from both. While we make no attempt to cast reflection upon the common ætiological relation to pelvic hæmorrhages of ruptured tubal pregnancy, nor upon its very frequent occurrence, we desire to offer some very conclusive evidence against the positive statements that have gone out to the effect that we will always find this condition in such hæmorrhages. There are many instances in which women are deeply wronged by such diagnoses. Ofttimes these hæmorrhages have occurred in virgins at a very young age (Fordyce, 11) and in widows above reproach (Newman, 22).

The prime question, then, is whether in some cases in which pelvic hæmorrhage occurs in women, even where there is a tolerably good history of ectopic pregnancy having ruptured, there may not be some other cause than pregnancy, and if such be the fact, should we not give to these various causes their proper position in the ætiology of such hæmorrhages? If such be true then the study of this condition will lead to a still better knowledge of the pathology of the internal generative organs of women and their environments.

These hæmorrhages result from ectopic pregnancy, malignant disease of the uterus, its appendages or rectum; from varicose veins in the broad ligaments, from vermiform appendage disease and from inflammatory disease of the ovaries and fallopian tubes, as well as from various other causes.

Our remarks are limited to inflammatory disease of the tubes and ovaries and will be exemplified by the following case:

Ella B., colored, 23 years old, was admitted to the Columbia Hospital for Women May 5, 1897, complaining of severe pain in the lower part of the left side of the abdomen. She was married and had two children, the last four years ago, and no abortions; had been having "womb trouble" for the past five years and at no time had called herself well. Menstruation had begun at the age of thirteen years, was

usually regular, scant and lasted three days; was sometimes slightly painful and had last occurred two weeks before her reception.

This period had been slightly delayed, had come with great pain and had continued freely up to date.

An examination showed her to be quite feeble and pale; pulse rapid and feeble and temperature raised. A mass was felt above and to the left of the uterus and the right appendage, much enlarged, was adhered. The cervix and perinæum were both lacerated, the uterus large, well forward and partially fixed; nothing abnormal was noticed on palpation of Douglas' pouch. The mass felt to the left was thought to be a fibroid or a tubal pregnancy and an operation to be advisable. On reaching the peritonæum in the abdominal incision it was found to be deeply stained brown, and when it was opened there escaped a quite large quantity of fluid and coagulated blood.

Ruptured tubal pregnancy was now thought to be the unquestioned cause of the hæmorrhage; the omentum was glued down at a small point on the top of the left Fallopian tube, an inch from the abdominal ostium; this tube lay high on top of the bladder and broad ligament and with its accompanying ovary was adhered, but readily separated and elevated. It had the shape of a bologna sausage, the dark blue covering of it being no thicker than that of the sausage; the appendage was removed and at the site of adhesion of the omentum it was found to be minutely punctured, but the margin of the opening (one line in diameter) was covered by the omentum; the other appendage being badly degenerated, was also removed; the peritonæal cavity contained a considerable quantity of blood clots, which was principally in the pelvis and not walled by adhesions; recovery was complete.

The specimen was found not to be a ruptured tubal pregnancy, but instead a small blood sac in the ovary and a larger one in the tube. These were connected by a small sinus formed from the groove in the ovarian fimbria of the tube by adhesions over it. Along the sinus could be passed a small probe from the tube through the canal into the ovarian blood sac and on through the opening in the wall of the ovary into the peritonæal cavity. Through the opening in the wall of the ovary the blood had escaped into the peritonæal cavity. The tube was distended by a large unorganized blood clot, very black and readily separated from the tube wall.

The hæmorrhage had probably originated in the ovary and the only point of the fimbriated end of the tube that was not closed was adhered to the ovary at the site of this blood collection. As the hæmorrhage continued the internal pressure against this sac wall became so great

that rupture into the tube occurred and continued in that direction until the resistance of the wall of the tube prevented its further dilation. Then as the hæmorrhage was not checked the wall of the ovarian sac again ruptured, allowing the outpouring of blood found in the peritonæal cavity This seems the only plausible way in which it could have occurred. The history of former uterine trouble and no pregnancy for nearly five years; the rapid and feeble pulse, with the high temperature and anæmia; the severe pain with little distension, together with the unusual continued menstruation and the pelvic condition found by examination, led to a strong suspicion of the existence of ruptured tubal pregnancy. The appearance of the peritonæum and peritonæal cavity, together with the first sight of the appendage still strengthened this suspicion. It was not until after my examination of the specimen and an examination of it by Dr. Lamb, of the Army Medical Museum, to whom was first furnished the history of the case, that this suspicion was removed. Dr. Lamb says that unquestionably no pregnancy had recently existed in either tube or ovary.

As an example of this mistake in diagnosis, a case in which hæmatosalpinx was diagnosed as ruptured tubal pregnancy was reported by Price (26) as follows:

Colored woman, 22 years old, had persistent uterine hæmorrhage for five weeks, supposed to be due to retention of secundines after recent delivery or possibly to an early miscarriage. Menses at 12 years, regular, painful and profuse; married October, 1889; August 11, 1890, first child born—instrumentally, poor health since. Five weeks previous to admission, July 29, 1891, had profuse uterine hæmorrhage with clots; time corresponded to menstrual period; has continued to present, with much sacral and abdominal pain, aching in the limbs and general prostration. The uterus was enlarged, cervix soft and canal patulous, posterior and to the right of the uterus was a soft fluctuating mass of the size of a hen's egg. Patient kept in bed, hot douches employed and by August 2 flow was stopped. August 16, abdominal section; both ovaries greatly enlarged and cystic, tubes highly injected and fimbriæ occluded; both appendages studded by large peritonæal cysts. Right tube distended by a mass having the appearance of a gestation cyst, but which proved to consist simply of organized blood clot. A hood of omentum enveloped the outer extermity of the tube and was adhered to the mass. Newman (22) reports a case of hæmatosalpinx he had operated on for ruptured tubal pregnancy, in a widow. She had severe uterine hæmorrhage with the usual history of ruptured tubal pregnancy. Griffiths (15) reports the case of a woman, multipara, who

had the history of an abortion at three months, at which a membranous bag came away; periodical bleedings followed; two weeks later noticed lump in lower part of right side of abdomen, quickly followed by lancinating pains in same region and great loss of fluid blood from vagina, followed by two similar attacks in a short time. Ectopic pregnancy diagnosed; both appendages removed by operation; from right side large hematosalpinx and cystic ovary; small hæmorrhagic infarcts in Fallopian tube found by microscopic examination, but no villi or other evidence of pregnancy; left tube was a large hydro-hematosalpinx. Briggs (5) also reports a case of hæmatosalpinx in which ectopic pregnancy was thought to be the condition. Croom (6) reports a case in which he diagnosed ruptured tubal pregnancy of from twelve to fifteen weeks, in which were present a souffle, a rapidly growing extra-uterine tumor and hæmorrhage following suppression of the menses; operation; came down on a dark sac, soft and fixed, containing blood and which ruptured just as it came to the abdominal surface. He ligated the pedicle and removed it, still thinking it tubal pregnancy, but the microscope showed it to be hæmatosalpinx, with no trace of pregnancy. The same author quotes Paul Ruge (29) as having had an experience precisely similar. Goodell (14) has seen like cases. Morrison (21) reports a case of hæmorrhage into the ovary that was diagnosed as tubal pregnancy, and the literature of the subject teems with such cases as are here mentioned.

The frequency of hæmatosalpinx can not be doubted and ovarian hæmorrhage is by no means rare. Hæmorrhage from varicose veins in the broad ligament or the ovary is not an impossibility. That these organs may rupture under the distension by blood or from other causes and severe hæmorrhage occur is abundantly proven. Such cases have been reported by Duncan (9), Pilliet (25), Maurange (20), Alloway (1), Boldt (4), Fowler (12), and others. That urgent symptoms are present in most of these cases is attested by the many writers on this subject, who mention the terrific shock and collapse even when the amount of hæmorrhage is not extreme. A quite considerable number of cases of hæmorrhage from the ovary or the Fallopian tube perish. Peuch (24) reported a number of autopsies in cases of non-pregnant Fallopian hæmorrhage, and, although at that time ectopic pregnancy was not so well understood as to-day, yet, his careful report seems to prove his claims. Walter (30), Lewis (19), Fowler (12) and Fordyce (11) report fatal cases and others, in which abdominal section was successfully done, are reported by Boldt (4), Alloway (1), Knaggs (18), A. B. Johnson (17) and many other observers. These cases show how easily

various hæmorrhages into the pelvic cavity may be mistaken for the hæmatocele of ruptured tubal pregnancy. They also demonstrate how similar their histories often are to what we expect in ectopic pregnancy. Their termination, however, is the same in that some get well without operation, others with surgical intervention and many perish early unaided.

It may be well to briefly consider the causes of these hæmorrhages from the tubes and ovaries, inasmuch as they are not at all uncommon, and so often lead to a mistaken diagnosis of ruptured tubal pregnancy, pregnancy, or other conditions. It is the consensus of opinion that in the case of the ovary the organ has been undergoing degeneration previous to the hæmorrhage. It is well known that pelvic peritonitis usually cements the organ to some of the surrounding viscera and abdominal operators recognize in the resulting imprisonment a probable cause of the sclero-cystic degeneration of that organ so often found. We open the abdomen for the removal of pus tubes and find the ovaries are often not connected with the pus sacs, but completely or partially imprisoned by the inflammatory adhesions. We usually find on closer inspection, certain tightly drawn bands of connective tissue across the ovary producing sulci on its surface. They will materially change the shape of the organ, giving it one somewhat like that of the cantelope. Generally between these constricting bands can be seen the cystic degeneration of the organ and which is nearly the same throughout its follicular portion. This inflammatory action has been going on in the ovary itself, and the connective tissue thus formed has, perhaps, prevented the complete development and rupture of the Graffian follicle. This includes ofttimes fatty degeneration of the walls of the blood vessels with a resulting gradual dilatation of them to such an extent as to warrant the application of the term "varicose veins of the ovary" (Dudley, 8; Petit, 23; Fraisse, 13).

Now from various causes, such as menstruation (Rollin, 28), traumatism (Waller, 30 and Baer, 3), mental or sexual excitement or shock, rupture of these veins with an outpouring of blood of greater or lesser degree occurs. This may be only into a follicle or the stroma of the ovary or it may be that several follicles merge into one large blood sac as the hæmorrhage continues, their separating wall being weaker than the outer wall of the organ. This produces the ordinary hæmatoma we so often find on opening the abdomen, and which we are wont to attribute lightly to menstruation. If the ruptured blood vessels be of good size the outpour of blood may be quite large. If the distension of the sac thus formed becomes too much for its wall to withstand then

rupture into the peritonæal cavity occurs. The amount of hæmorrhage may vary from a small staining of the peritonæum to a deluge of free blood into it.

When the abdomen is opened in these cases, which sometimes is purely coincident, and at others from the emergency caused by the loss of blood, we will find a large quantity of free blood (fluid and cogulated) or a hæmatocele in the pelvic portion that may be quite well limited by peritonitic adhesions.

The hæmorrhages in the ovary may be conveniently divided into *stromar* and *follicular*. Stromar hæmorrhage may be slight, causing but small infarcts, or it may be sufficiently great to make of the organ a mere shell containing a mass of blood pulp or clot having the appearance of spleen or liver tissue. This is probably of septic origin. If the shell burst internal hæmorrhage followed by peritonitis and death may be expected and actually occurs (Rollin, 29).

Follicular hæmorrhage may occur, *first*, as a multiple vesicular variety of infectious diseases or poisons, as meningitis, phosphorus poisoning, etc., and is usually in both ovaries. In this form there may be many hæmorrhagic points and occur in no particular part of the organ. Hanks (16) reports such a case. *Second*, into dropsical follicles —akin to hæmorrhage into ovarian cysts, but is very rare; *third*, from the corpus luteum, denied by some writers, as will be later noted, and *fourth* and most important, excessively abundant ruptures into the Graffian follicles at the menstrual period. This form is limited to one ovary, though it may occur at different times in both. It may be in degree so slight that only the surface of the follicle farthest from the periphery of the organ is ruptured, and here is well shown the effect of the connective tissue barrier covering the surface of the ovary, through which the follicle is in vain attempting to force its way. The rupture of the follicle is behind with the formation of a hæmorrhagic cyst that may attain the size of an infant's head. Or, it is excessively severe and ruptures into the peritonæal cavity causing death from hæmorrhage or from peritonitis. The celebrated case of Scanzoni is of this variety. At an autopsy on the body of a young girl dying suddenly during menstruation, he found three liters of blood in the peritonæal cavity. Mary A. Dixon Jones has described these hæmorrhages into the so-called false corpus luteum, or corpus luteum of menstruation, and has mentioned a peculiar formation, which she designates "endothelioma changing to angioma and hæmatoma," and "gyroma as the prestage of endothelioma" (Foerster, 10). Rokitansky was probably the first to describe the hæmorrhagic cysts of the corpus

luteum and says he believes no true corpus luteum could be thus transformed. Byron Robinson, of Chicago (27), goes even further, expressing doubt of the corpus luteum having any relation with pregnancy. Foerster endorses the ideas of Jones in part and throws grave doubt upon the constant relation betwen the true corpus luteum and pregnancy. He mentions a number of cases in which the true corpus luteum was found in women years after conception and cites Papow's case, a prostitute, 21 years old that had never menstruated and never conceived, and who died of prussic acid poisoning. In her ovary was found a fully developed corpus luteum. This case of poisoning should have had the "corpus luteum" in both ovaries, but shows quite strongly the liability of mistaking such conditions for a corpus luteum of pregnancy or of menstruation. He says the corpus luteum of menstruation is in many cases a mooted formation and calls them pathological endotheliomata that form under the influence of chronic oöphoritis without coming to a typical end, or gradually increasing in bulk and frequently leading to the formation of hæmatoma under incessant local and constitutional trouble. We are inclined to this line of ovarian pathology. We cannot believe the many infarcts seen in ovaries are the marks always of either pregnancy or of menstruation.

Doran (7) and others report cases of ovarian apoplexy, some of them occurring at the menstrual period, in which the ovary was nearly divided into two fairly equal parts by rupture from internal pressure. These cases are merely referred to to show the fragile state of the interior structure of the ovary in such hæmorrhages and as proving the chronological relation between the inflammation and the hæmorrhage.

The cases of hæmatosalpinx reported are legion and most of them will stand the most crucial test of the supporters of the theory of ectopic pregnancy as the cause. This being true it would appear that to longer contend for such pregnancy pathology is *to* obstruct the advancement of knowledge of the diseases of these organs. There is usually some grade of inflammation of the tube preceding the hæmorrhage. It may be to the stage of very marked degeneration of the structure of the tube and with it a resulting weakness of the blood vessels that yield to some unusual tension. In many of the tubes found containing blood, pus was also present and in a few instances pus has been found in the ovaries in the form of small abscesses. This condition no doubt accounts for the frequent occurrence of peritonitis and death as sequelæ of these hæmorrhages. To us it seems that to ignore such evidence of the frequent occurrence of hæmorrhage from the ovary and Fallopian tube, due to inherent disease of those organs and to continue to diag-

nose rupture ectopic pregnancy without microscopical or other certain evidence is to ignore scientific truths and to foster false pathology.

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SOME OBSERVATIONS ON THE TREATMENT OF ANTE-MATURE LABORS, ESPECIALLY OF ABORTION.*

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Among the many intricate problems presented by gynæcic expression there are few, if, any, to the solution of which more importance is attached, so far as the preservation of the family happiness is concerned, than does the successful treatment of ante-mature labors, especially abortion. Yet here, like in most gynæcic questions, there is the usual marked absence of unity of opinion. The explanation is not obscure.

It is a well-recognized truism that where art is necessary in the application of science, there will always be difference of opinion as to the best method, dependent upon the skill to judge and to execute, characteristic of the individual or of his followers, and that, too, notwithstanding overwhelming argument or logic. Then, too, this diversity of opinion is encouraged by the never ceasing friction between rigid observance of rule, and judicious observance of indication; between the value placed upon theoretical possibilities and the value of clinical facts and practical probabilities. While engaged in post-graduate work I remember witnessing an instructive expression of this friction between rule and indication; the problem was simple, its solution disastrous. It was in the days when the sesqui-chloride of iron was much used to touch up puerperal wounds.

Invited to accompany the physician to witness the effect of the iron, I was surprised that the patient seemed to regard him with such terror, and knowing him to be a kind and conscientious gentleman, I asked him the reason. He explained that it was caused by that confounded Ferguson speculum, which he felt he must insert, though he would rather have inserted a bivalve, but his teaching had been to use the cylindrical speculum of Ferguson. When he attempted to introduce the Ferguson, with a cry of pain the patient half slid, half crept, from the dorsal position to one of standing against the high end of the wooden bedstead; three days after she died.

In practice indication is often a better guide than rule. Observe

*Read before the Chicago Gynæcological Society, March 25, 1898.

that vast field of successful work accomplished by the practitioner of experience, be he hospitaler or lay; he, too, regards rule, but not at the expense of indication. Called to a case of mature labor, in the conduct of that labor he is guided by a policy, the fruit of a ripened clinical experience, which he indicates in the brief but expressive sense, "Trust nature, don't interfere unless necessary." Herein is but reflected the same spirit of sentiment that is conveyed in the scholastic doctrine, "Interfere then when danger presents to mother or fœtus."

In all forms of labor, whether at the first month or at the tenth, the stages of labor and the principles of labor are always the same; the detail of technique or method only altering as it alteration finds. Now, can these generalizations applicable to labor at term be applied with equal safety to ante-mature labors, the abortion, the immature and the premature labor, especially the rule, "Interfere then when danger presents to the life of mother or fœtus." I believe so, and further believe that if he will be so guided, with due regard to indication, the general practitioner or the specialist accoucheur will *never be too late with his assistance*, as the radical declares of the conservative, and *less often guilty of dangerous anticipatory, though well-meaning, assistance*, so the conservative declares of the radical.

Given a labor in which there arises an indication, there are several methods to treat the indication. Shall it be a simple Kristeller, a forceps, an embryotomy, or a Cæsarean section? Or, again, in retention, a manual or instrumental curettage, or a hysterectomy? Which shall it be? What shall decide the method? Shall it be wholly utilitarian? Surely, that method is indicated which possesses in the greatest degree possible rapidity of action, simplicity of execution, perfect results with least possible expenditure of energy, and which affords the greatest protection to the mother or fœtus; therefore, that method which combines simplicity with superiority in results.

In however skilled hands, results, so far as attendant is concerned, will always depend upon:

1. The significance attached to the indication.
2. The method chosen to treat the indication, both interdependent, the one upon the other. How true these reflections are, and that it may not seem superfluous to mention them, may readily be seen in scrutinizing the histories of the following three cases, all of them extreme in conduct.

The first case is cited by Dr. Newman as an expression of the conservative method in his paper, read before the American Medical Association. (See *Journal*, November 27, 1897). He abstracts it from

Cazeaux and Tarnier, page 577, as follows: Date before 1868, "Case two and one-half months, incomplete abortion. During the first five days the patient did very well, but on the sixth I thought I detected a slight odor in the lochia, and at 3 o'clock in the afternoon a violent chill came on, which lasted an hour. This unfortunate woman died on the tenth day. At the post-mortem we found the uterine tissue softened and its cavity filled by putrefied and still adherent placenta."

Here was an unfortunate case in which the indication for treatment, however regarded, proved of no benefit, where the error lay in a too rigid observance of the rule of conservatism. The indication for treatment here was to dilate and empty the uterus at once, at the latest upon the sixth day, if not before. (Upon the first day, when severe flooding occurred). Barring extra-uterine causes convalescence should have been a matter of a few days.

The next two cases show the results where the pendulum is swung to the other extreme of radicalism, where major operations were resorted to to overcome minor conditions. In the Centralblatt für Gynækologie, No. 12, 1896, Esser reports a case of "Cæsarean section for the removal of an excessively large (3400 gr?) six to seven months macerated, putrefying fœtus with cystic enlargement of abdomen."

An excerpt is as follows:

1. "Para ten months ago, patient delivered of living child per forceps.

2. "Para, present case; pregnancy normal. January 10, afternoon, labor commenced. January 11, examination determines *normal pelvis with a small head in pelvic outlet*, pains not effective, applied forceps, but slipped because of softened consistency of tissues and small size of head. Second application caused decapitation, followed by high intra-uterine examination free enough to outline entire fœtus and to reach the fundus of uterus; fœtus six to seven months cystically enlarged; arms now prolapsed; endeavored to make traction with arm, tissues so friable that arm yields, determines upon Cæsarean section! Recovery.

"Esser's conclusions: Enthusiastic suggestion that under similar circumstances like technique be adopted!!!"

In a later number of the same journal Ahlfeld takes the doctor to task for the extreme measures he had adopted in such a minor condition where Ahlfeld adds the hand and scissors were all that was necessary, if at all, to remove the softened macerated trunk, adding that apparently it seems that he (Esser) is a Frauen Artz, a gynæcologist, a covert reflection perhaps that the operation may seem to have been good gynæcology, but rather questionable obstetrics! Such certainly

was the case; had the case been left to nature or treated with hand scissors and dressing forceps (embryotomy) in a few moments comparatively speaking, the uterus would have been emptied and the case, under the usual treatment, relieved of all danger, and convalescence should have been established in a short time, and that, too, without subjecting his patient to the trying experiences of a Cæsarean section, however successful.

An Eastern journal also records one of these cases where heroic measures were adopted in an inferior case. The picture, quite common, is as follows (italics mine):

"IV.-para, two to three months abortion, cause not given. When doctor called was told everything had come away. Third day after, temperature 103.5°, pulse 110, possible retention, 1-2000 douche. Quinine as antipyretic (the use of antipyretics under these circumstances is open to objection; they serve only to mask, not to disclose). Fourth day another chill. Fifth day temperature 104.6°, pulse 130; *cervix widely dilated, readily admitting two fingers.* In the Sims position a *quantity* of partially decomposed, vile smelling decidua was removed with curette, uterus irrigated and packed with iodoform gauze. Sixth day, morning drop, evening chill. Seventh day, morning temperature 105.2°, pulse 140. *There was no tympanites or abdominal tenderness except on deep pressure over the fundus uteri.* Advised hysterectomy at his sanitarium. Recovery.

"X's conclusion: Until of late have contented myself with curettage and intra-uterine douching in these cases of puerperal sepsis, although not satisfied with it, for I have seen two patients die after it and I am convinced that if hysterectomy had been performed both lives would have been saved."

Even if this case shows good gynæcology (?), so far only as the hysterectomy is concerned, does it not also show deplorable obstetrics? Here was a simple, though a serious, sapræmic uterus, with retention, as stated by himself (see italics above). Can the other two cases referred to have been similar?

If not on the third or fourth day, at the latest upon the fifth day, with cervix widely dilated, readily admitting two fingers, that entire decidua, not only a quantity, should have been removed.

Among other things, does not this case suggest that too great confidence was extended the instrument—the curette? No operator, however skilled, should extend that confidence to his instrument that he can to his finger. With the finger, under those circumstances and in a few moments, the entire decidua could have been removed, and with

the usual treatment following curettage, so far as the obstetrical problem is concerned, convalescence with the happier state of genitalia intact would have been reached in not many days.

Of these three cases, the first is referred to as an expression of the conservative method of treatment. The latter, in all charity, I mention as ultra-radical types; not one of them was truly preservative. All of them savor more of the anarchistic, as all three were treated apparently without due regard for indication or rule, therefore it is no surprise that the cost in each case was greater than a true conservative estimate would have progosticated. Are not these unfortunate results often the case when individual inclination over-rides natural indication? Hence the aphorisms, "Good obstetrics makes bad gynæcology, and bad obstetrics makes good gynæcology." Yet how much kinder the obstetrician, for "Bad obstetrics makes known gynæcology; bad gynæcology makes none obstetrics."

In abortion, if it be threatened, the treatment is like in threatened mature labor, if danger is averted pregnancy continues; if not, inevitable abortion succeeds which is the introductory stage to actual abortion; just so are the successive changes in the mature labor.

Though it is easier to admit that immature and premature labors should be treated along the same lines as mature labors, when method in actual abortion is to be considered the problem seems more complex. Here, as Dr. Newman well says, "It is surprising that there should exist among authorities the wide divergence of opinion, in fact, the absolute antithesis, in regard to the proper treatment of inevitable abortion."

The conservative method of treatment with its "Give nature a chance," with its too little regard for indication and its armed defensive attitude, if carried to extremes, like in the first case, will always do harm.

The radical method with its principle of, given an abortion regardless of indication, interfere and anticipate nature with an initial armed offensive attitude, is going to do and does harm, since in abortions, like in other forms of labor, anticipatory assistance without indication is most often won at a greater cost of maternal energy than is the case in that of a wisely conducted, truly conservative method.

A method to be of the proper and successful kind, possessing sufficient elasticity to meet the requirements of all cases, must combine the elements of both the so-called conservative and radical procedures, but without the extremes of each. A method where indication especially will be the signal for interference rather than inclination, and then with

the most simple technique, not with the most labored; it will avoid the too late and also the too early and in principle is: Be conservative in the presence of a normally coursed abortion; wait and give nature an opportunity to act. Be radical when dealing with an abnormally coursed abortion, interfere and empty at once.

Though it is an arbitrary distinction, yet practice has led me to consider *normal course abortion*, as follows:

1. Where first stage dilatation occurs without pathologic manifestations.

2. Second stage expulsion of fœtus in abortion is of little or no importance.

3. Where third stage expulsion of ovum occurs en masse, or where retention with dilated os continues no longer than twelve hours, that is, from morning to night, or night to morning; in both cases without pathologic manifestations. In these normal cases I am conservative with pack and give nature an opportunity to act.

Abnormal course abortion:

1. Where dilatation progresses so slowly as to cause serious exhaustion both physical and mental: this in an experienced sense.

2. Where with dilated os retention continues longer than twelve hours; the dangers of exposure are too serious to chance anything, notwithstanding exceptional favorable case.

3. All abortions, in whatever stage, where there is danger regardless of character, as from infection, serious hæmorrhage, chill (not mere nervous), sepsis, or any other condition indicative of danger. In these abnormal cases I am radical with an empty at-once principle.

Of great importance in the treatment of abortion, whether retention be complete or partial, is the degree of dilatation. In practice this has led me to divide abortions in their treatment into two classes: (1) those in which dilatation is incomplete or nil; (2) those in which dilatation is complete. In abortion the first stage is only complete when it is such that the important passenger, the secundines, can pass.

Though in all cases I am ready to interfere as actively as necessity requires with tampon, dilator, curettage, or other operation, yet in the first class of cases with undilated os, where the course of the abortion assumes a normal one, I prefer to pack and wait for nature to dilate, as in her efforts to dilate she breaks down the fibrous union between the decidua vera and the uterine walls, strongest at this time of pregnancy, which is the all-important factor for success and upon which the subsequent course of the case depends. It is just because this favorable breaking down of fibrous union does not occur that partial abortion

with its dangers is so frequent. The uterine contractions force dilatation of the os just sufficient to break the cervical decidua by pushing down and expelling the perinæal fluid, and perhaps the gestation sac with its liquor amni and fœtus. Were the secundines loose or loosened the power is sufficient to force them through and maintain dilatation, but the fibrous union being still intact, contraction of the os with retention is the result. When dilatation* is tardy, and here the same quality of judgment is required as under like conditions in mature labor or elsewhere, I like to introduce a laminaria or tupelo tent which supplies the pièce de résistance and will at the same time tend to prevent or control hæmorrhage and will encourage uterine contractions with slow but thorough paralyzing of the os dilatation and breaking down of the decidual union. Therefore, to facilitate this fibrous detachment, I do not adopt rapid divulsion to favor the first stage in the normal course abortions, as suggested by the radicals.† Rapid divulsion with steel dilators or incisions will not accomplish this favorable decidual fibrous solution. The dilatation is too acute, and where curettage follows it is effected at a greater cost of energy and with more instances of repeated curettage than when preceded by the slower natural or tent dilatation. I think also a greater quantity of syncytia remain in the meshes of the uterus after curettage following rapid divulsion than after the slower dilatation. The syncytia with rapid divulsion not being disturbed by longer continued, uterine contractions remain so firmly adherent that in the curettage, especially curettage with the sharp curette, they are more broken off, cut off, than drawn out and remain imbedded in the uterus to thus encourage subsequent decidual and other forms of endometritis and metritis. With slower dilatation and loosening the syncytia are more easily and thoroughly dragged out intact from their attachments.

In the second class of cases, where there is complete or relatively complete dilatation of the os, I favor the radical or empty-at-once method. Such dilatation is nature's signal that she is ready to deliver the

*"If after employing tampon for 24 hours the cervix remains closed a tupelo tent should be resorted to, never a sponge on account of danger of septic infection." Note foot of page 577 Cazeaux and Tarnier. (There are some cases where tent may be introduced at once as indication determines, here experience only can decide the hour.—S.).

†"The advantages at times of immediate dilatation by force has given rise to—instruments, but they are all objectionable since they take their point of support from portions which are liable to yield and tear under the strain and by themselves they do not suffice to make a passage admitting the index finger. —Pozzi, Vol. I., p. 113.

ovum or its parts. If it is not delivered, then some unfavorable cause, which should have been corrected by the time dilatation has occurred, is still operating and requires correction. Under such circumstances nature invites assistance. It is true that there are a few cases, comparatively speaking, where simple packing will encourage expulsion, where after some hours the packing is removed and the retained parts are found in the vagina, or so loosened that they may easily be removed en masse with finger, forceps or blunt curette. This conservative waiting treatment may answer in hospital work where there is constant attention, or in practice where the attendant has time to follow the case quite closely at short intervals; but where the attendant cannot always be at hand, as in the case of the busy practitioner, or the country practitioner, the patient's safety is more seriously compromised by the conservative than by the radical method, both immediately and subsequent to the time of abortion; and even in these comparatively few from the outset favorable cases, the radical method is often found imperative. The longer the retention, the greater the real or threatened danger, and certainly the longer the retention the greater is the cost to maternal vital energy through real or threatened danger from exhaustion; small but continued losses of blood; hæmorrhage and sepsis.

It is argued against the radical method that the uterus has retained secundines after abortion and other labors for days and weeks, even months, with apparent impunity. This is a wrong figure. It is not true. In these cases there is always serious loss of energy and a morbidity which is more or less exhausting and telling upon the patient from the irregular losses of blood, irregular chills and fevers, and the increased and weakening utero-vaginal discharges. Sooner or later, the case must be corrected; either nature does so, or the physician must, or she dies. Surely, this is not with apparent impunity!

In June, 1896, I had such a case where the patient was in abortion with a midwife in attendance. She was bleeding slightly. Patient expressed a wish that I not remove the secundines; (the os was dilated with retention) as she was having good pains; instructing the midwife to let me know should the secundines come away, I left. Not hearing from the case, I took it for granted that the patient had completed the abortion without further trouble. To my great surprise, seven weeks later I was called to the same patient and found her suffering with a severe hæmorrhage coming from the uterus. Clearing out the clots, which extended from the labia solidly into the uterine cavity, I found and detached with finger a decidua vera of the third month,

which had been retained in the uterus since the attempt of seven weeks before.

She related that the next day, after my first visit, the blood had quite stopped and the pains had almost disappeared. Thinking she was all right, four days after she got up and commenced doing little things about the house. So far as impunity in her case is concerned, she related of irregular flowings, backache, bearing down pains, chills, and fever, and complained of great exhaustion. She was pale and emaciated, though still just able to be around. Her seven weeks of retention cost her enormously in vital energy.* This is the rule in these cases with a morbidity always of consequence. Retention even without mortality (it is so argued, but incorrectly so), but usually with increased morbidity, cannot argue in favor of the expectant plan.

Though the problem of abortion is still the same to-day as it was in the days of that great law-giver, Moses, who will deny that science till to-day has not made at least some advance along the lines of its more successful solution, and considering the changed conditions of society of to-day. The ultra-conservative? Let him carefully regard himself, and will he not recognize a striking similarity in his ultra-conservatism of to-day and in that characteristic of the Wandering Tribes of circa, 1490, B. C., as seems conveyed in the instructions for "Uncleanness of Issues," as given in Leviticus, Chapter 15, verses 25, 26, 27, 28 and 33.

Knowing that retention increases loss of energy and the development of morbidity, in the third stage of abortion, especially with os dilated, like in the third stage of mature labor, after a proper interval I am always radical with an empty-at-once method. If nature does not express the retention, Hœning's method, the Credé abortion, may succeed; if not then, curettage. I remove with finger analogous to the hand in later labors. One of the greatest objections usually raised to the radical method is the danger of carrying sepsis or increasing it through exposure of the freshly denuded surfaces. But this holds true only in the hands of the unskilled, a condition equal in any method. This should not be. Where it is the case, it is usually due to incomplete curettage where some fragments not removed act as dangerous foci. But these errors of omission are commissions more often of the instrumentalists than of the digitalists.

*While this paper is being typewritten I have been called to this patient to treat baby five months old. Fecundation must have occurred about January 13, 1897, as baby was born about October 20, 1897. The infant is a large flaccid fungoid growth appearing infant showing a constitutional taint.

In the manner of performing curettage there are those who prefer the instrument; most prefer the blunt curette, some the sharp curette. I prefer the finger and still believe, as expressed in my inaugural thesis of 1893, Amer. Jour. Obstet., that in abortions, like in other forms of labor, to remove the secundines there is no instrument, in howsoever skilled hands, that for safety, information, thoroughness and for differential diagnosis, is the equal of the finger. I would not convey the idea that I have no place for the curette in obstetrics; only that where there is a choice I favor the finger.

In the discussion following my thesis, at whose presentation I happened not to be present to defend, I was surprised to read of the acumen expressed therein against digital curettage in abortions with retention. I have been led to believe that some of the gentlemen have since changed their opinion.

Referring to the advantages of the finger in the uterus, among the contemporaneous may be mentioned Dr. Paul F. Mundé, who, in his *passage d'armes*, Medical News, November 27, 1897, with Dr. Henry J. Garrigues, under note II., expresses himself as follows: ". . . to trust to the information on this point (that the cavity is entirely emptied after curettage) imparted by the curette alone, even in the hands of the most expert operator, is notoriously unsafe."

This is but a reiteration of his opinion expressed in 1883 upon the same subject, although at the time of my first paper I did not know it not having read this work.

In the choice of the finger to curette, I differ from Lusk, in that I use the middle finger instead of the index. The middle finger has a longer reach than the index, swivels better, and is stronger, both as regards the finger as a whole, and the operating ungual phalanx.

Having emptied the uterus I irrigate with warm, not hot, 2 per cent., carbolic solution, not especially for its germicidal effect, but for its cleansing, stimulating and alterative qualities. I do not believe I have ever found it necessary to pack the uterus after curettage, notwithstanding I have encountered many sapræmic and septic cases. Still did I think the indication required the pack for drainage I certainly would adhere to the rule. Anent this subject of drainage, Rishmiller, AMERICAN GYNÆCOLOGICAL AND OBSTETRICAL JOURNAL, Vol. 9, p. 457, presents two interesting clinical conclusions:

1. That the average temperature of the patient after curettage is lower without than with gauze packing.

2. That more cases of pyosalpinx are produced from the in-

judicious use of uterine gauze tamponage than from the use of the curette.

Not having used the pack, I am not able to judge clinically, yet I think the suggestion is not without considerable merit.

Cases.

In presenting the following cases I have chosen some where the effect desired was a purely physical one; where a mental effect is to be added, which is always very important, that can easily be shaded according to environment.

Case I.—Confirmed Malthusienne; self-induced tenth week abortion; slight dribbling and occasional pains with backache since six days; os, match point, dilatation, but cervix firm. First visit, evening, introduced small No. 1 laminaria tent using for experimentation soap of a five-cent quality as lubricant. Codein as sedative. Second visit, next morning; during night strong pains; morning found tent and fœtus in vagina; no odor; decidua retained; irrigated and packed vagina. Third visit, same evening; no serious temperature; dilatation still incomplete; introduced laminaria tent No. 3. Fourth visit, morning, removed tent, retention, loose in cervix, easily removed with finger without chloroform. Irrigated uterus and vagina with per cent. carbolic douche. No packing. Next day, normal condition, last call.

One week after patient reported at office, recovery good. Sequelæ none; two weeks after actively engaged in her usual vocation.

Dr. J. L. Stewart, Assistant in the Bacteriological Institute, Rush Medical College, from his examination of tents and placenta, reports as follows:

Tents.—(Both tents were bought at the same time and carried in my case as ordinarily carried.) Experiments on tents used and unused. Received two tents, one of which was used, the other unused, under aseptic precautions scrapings from each were planted upon slants of agar-agar. The tubes made from the unused tent (which had been aseptically preserved) showed no growth whatever. The tubes made from the used tent, on the following day showed two growths; one was a growth composed of small, rather transparent, colonies, which in stained preparations, proved to be streptococci. They stained with Gram's method, and the colonies reached their maximum size, (about that of a pinhead), in three or four days, after which the second growth spread over and more or less obliterated the first. The second growth was a large grayish one and the stained specimens showed it to be

composed of large, rather irregular bacilli, probably saprophytes; did not stain with Gram's method.

Placenta.—A placenta was examined from cultures and in stained specimens streptococci were found which stained with Gram's method. Also some saprophytes were found.

Note.—(Stewart). The streptococci on the placenta need not necessarily be streptococci pyogenes. Authorities* find in normal vaginæ certain streptococci. I (Stahl) have never previously had vaginal secretion of this case bacteriologically examined, but I think many forms would have been found.

Case II.—Had used hollow wired catheter to produce abortion of about seventh week five days before; first visit, (1-6-98) because of retention, chills, fever and fear. Made first, tube inoculation of cervical and vaginal secretions. No dilatation; dribbling; irrigated; introduced a No. 2 laminaria tent. Second visit, next morning, removed tent, but dilatation not complete; no hæmorrhage; vagina packed until evening. Third visit, evening, irrigated and inserted No. 3 laminaria tent. Fourth visit, morning, tent and retention in vagina. Chloroformed to satisfy myself that the cavity was completely empty. Finger in cavity determined all clear. Irrigated; no packing. Fifth, last visit, (1-12-98) evening, made second inoculation; recovery. Since the ninth up and doing light household duties.

Dr. Stewart's bacteriological examination determined *Catheter.* Catheter, which had been used in labor, was rubbed over the surface of an agar-agar slant. On the following day one rather abundant growth was observed upon the surface of the slant. Stained preparations from this tube showed the colony to be made up of large, rather irregular bacilli which did not stain with Gram's method—saprophytes.

Test Tubes.—Received four test tubes; two labeled (1-6-98), and two labeled (1-12-98). In all four of these tubes the growths were much alike. All were examined from stained specimens only. Various kinds of large bacteria were found, some staining with Gram's method, and some did not. No streptococci were found in either.

Note.—It is possible that after three or four days the saprophytes may have completely occluded and covered over the finer growths such

* "The virulency of the lochiæ was recognized by the ancient Greeks. Injections always produce toxic effect, increased temperature and locally pus and phlegmonous reaction. Rabbits, when so injected, die in from two to seven days of abscess. When not opened opportunely. Intravenous effect is embolic pneumonia, death three to five days." Müller, Handbugh der Geburtschulfe, Vol. I., p. 545. "Effects of lochia upon living tissues."

as streptococci, so that at the time of examination nothing would have been found. Streptococci are, as a rule, short-lived any way.

Case III.—Unintentional abortion of twelve weeks, emergency case; intense hæmorrhage, covering clothes, saturating bed, patient a picture of exsanguination. Had fallen over bed too weak to remove clothes; partial retention; among clots found in bed was unbroken gestation sac loosened from decidua and expelled intact. Coagulum, extending from labia into uterine cavity cleared away, with finger re-

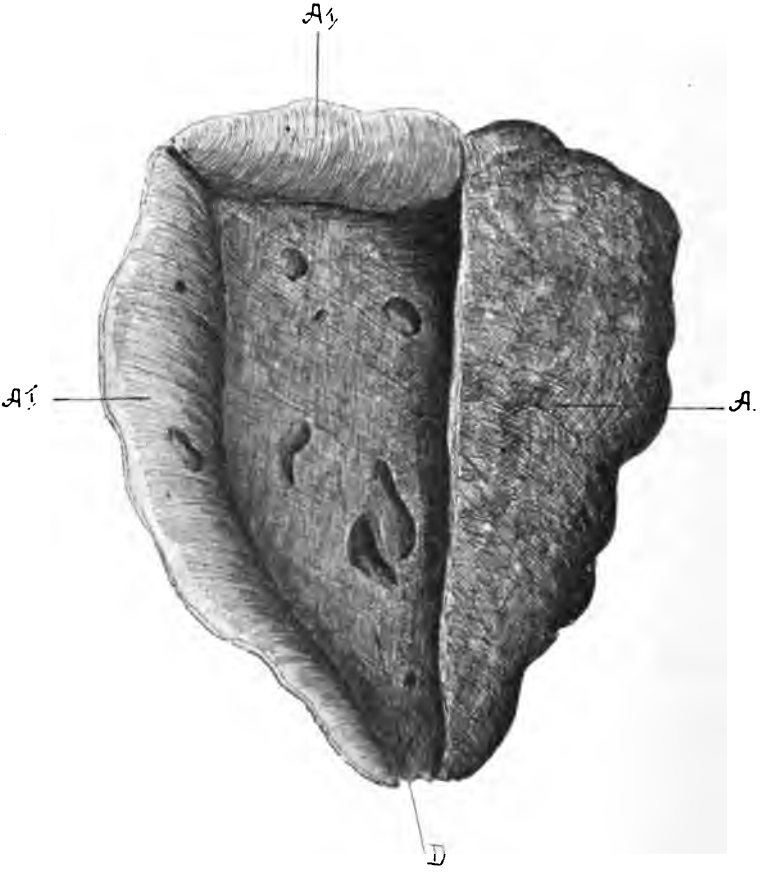


Fig. 1. (Case 3). PERFECT DECIDUAL CAST FROM 12-WEEK ABORTION. *A.* Decidua vera. *A1.* Decidua vera reflected to show. *D.* Peritonæal cavity.

leased, and removed complete decidual cast. Uterus now firmly contracted; no hæmorrhage. As I had nothing with me, gave instructions

to douche. Gave prescription for a tonic and another for antiseptic mixture to be used in douche. Altogether from the time I entered the

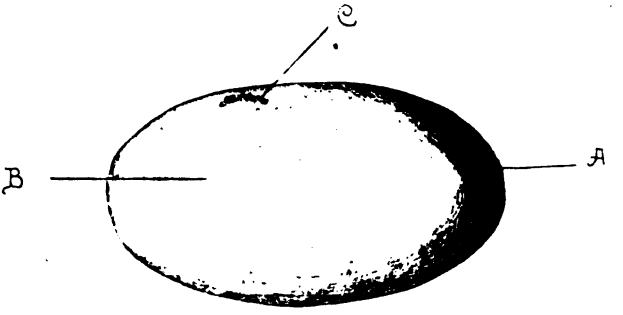


Fig. 2. (Case 3). GESTATION SAC EXPELLED INTACT FROM ACCOMPANY 12TH WEEK DECIDUAL CAST. *A*. Amnion. *B*. Liquor Amnii. *C*. Amorphous mass representing fœtal development. Abnormal development of fœtus due to disease which also caused the abortion. Its nature was not ascertained.

house until time I left was not over fifteen minutes. Second and last call next morning. Patient reported in office tenth day after in good health.

Case IV.—Was interesting as a crucial case, and between those who had been previously engaged in forensic discussion concerning the advantages of the finger in abortions. The abortion; just before I was called, a curettage alternately with finger and instrument had been made and cavity cleared as thought, with the exception of one piece. The gentleman desired to give chloroform, but patient refused; meanwhile, one of the children, unknown to the gentlemen, had left a call for me without stating the trouble. When I reached the patient and saw and heard, to admit the truth, under those circumstances and considering that he had unmercifully criticised my previous paper, I was more than delighted. Insisting upon his presence, the students were dismissed. Digital examination determined that the piece that was intended to be curetted was the uneven, irregular decidua serotina. It needs hardly to be said that I was more than usually careful in my examination under such peculiarly soothing circumstances. The patient was not curetted; uterus finely contracted, sequelæ none. I called twice, nothing of importance; likewise a month after.

In my paper upon "Digital Curetting of the Puerperal Uterus," of 1893, I called especial attention to the ease of mistaking the serotina for retention and that danger may follow therefrom.

Case V.—Also Malthusienne self-induced seventh week abortion

with previously used catheter. When I saw her at 8 P. M. she was in a state of great excitement, with intense ineffectual pains, chills, fever, but without any sign of blood; great fear and remorse. Gave codein as sedative; 8:30 excitement simulating delirium. I cannot account for this delirium as other than nervous, because of subsequent events. The delirium was so severe that she threw herself all over the bed in all of the opisthotonos positions. Temperature 102.5°. Introduced No. 2 tent; 10:30 not any better. Temperature 104.6°. Gave chloroform; tent slightly enlarged so that upon removal I could after a little perseverance introduce my finger into the cavity. Removed ovum with decidual membrane, no hæmorrhage, no bad odor; uterine douche with warm, 3 per cent. carbolic solution. Did not drain or pack. No medication.

The subsequent temperatures are interesting:

Temperature at	1:00	A. M.	103
"	2:30	"	104.5!
"	5:30	"	99.6!
"	9:30	"	98.4
"	4:15	P. M.	97.8
"	11:15	"	98.6

The next, second morning, thirty-six hours after removal, patient was up; next day she commenced her household duties. Always well since.

Case VI.—An ideal abortion; emergency case. About ninth week; considerable hæmorrhage; dilatation of os complete. Expressed by Hœning's method; decidual cast complete and unbroken. Notice gestation sac still attached to serotina and not ruptured. (See illustrations).

These are the class of cases which may deceive the beginner, where retention is complete with hæmorrhage, etc. With curette he brings away the sac and feels gratified, thinking he has completely emptied the uterus, but decidual cast is still there.

Tents.—I have preferred the laminaria tent because of its superiority in strength. The tupelo is good, but I do not like to trust its strength, especially where the smaller size, No. 1, is indicated. Elm is also good, but sponge, the cone especially, is a failure because of inefficiency at the internal os and sepsis. The general verdict against the tent, that it is septic, seems far-fetched. I have several times had examinations made of the surface of the tent, each time without bacteriological findings. As regards the interior let me present the following report by Dr. J. W. Ellis, Assistant in the Bacteriological Institute of Rush Medical College:

DEAR DOCTOR:—The three tents which you submitted for a bacteriological examination as to the condition of their interior, is as follows: I took three tubes each of Plain, Glycerin and Glucose-Lactose bouillon, in which I placed some chips from the interior of the tent, which were removed from each tent in an aseptic manner. The ex-

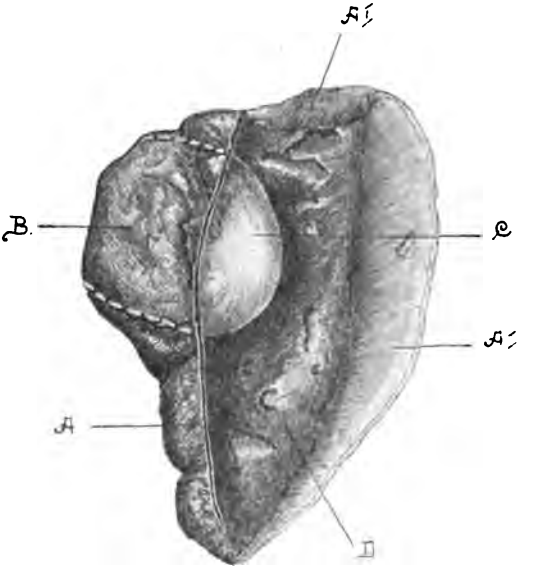


Fig. 3. (Case 6). PERFECT DECIDUAL CAST FROM 8–9 WEEKS ABORTION, EXPELLED UNRUPTURED. *A*. Decidua vera. *B*. Decidua serotina. *A1*. Decidua vera cut open and reflected to show. *C*. Gestation sac intact. *D*. Peritonæal cavity.

terior of the tent was removed with an aseptic knife and chips from each tent were placed in the above bouillon mixture with a sterile forceps. After thoroughly agitating each tube, nine in all, they were placed in the incubating oven for forty-eight hours. At the end of this time, after thorough agitation, there were several drops from each bouillon tube placed on slant agar-agar tubes, which were placed in the incubating oven for forty-eight hours. At the end of this time no growth showed on the agar-agar slants. I am, etc., J. W. ELLIS.

(These tents were from Sharp & Smith, taken without any particular choosing. The others above mentioned were from various sources; some hollow, some solid.)

In their application I have nothing to add to what is already so well known; I would only repeat to thoroughly irrigate the vault of the vagina. In choosing the lubricant your asepsis must be directed not

so much against resident germs on the tent as against the fermentative action of the mucilage of the tent, as it swells and absorbs moisture, in the presence of the secretions and discharges of the uterus and vagina. Like all mucilages, so here the heat of the body with the putrefactive germs in the genital tract, decomposes the mucilage, thus giving rise to an offensive odor which can be avoided if tent is properly lubricated. In Case I., where there was previously a slight odor, I irrigated, and lubricated the tent with a cheap alkaline soap at hand, yet there was expulsion with no odor to tent. In routine practice I pass the tent by means of forceps over a flame, then use some mineral lubricant with germicidal agent as vaseline, with carbolic acid or formalin, ten drops to the ounce. I avoid a vegetable oil, as it seemed in several cases to encourage decomposition. Dr. Montgomery recommends immersion in ether and iodoform.

Length of Time.—From one to twelve hours, never longer; where the dilatation is not sufficient remove tent, irrigate vagina and introduce a new tent.

The dangers of tents, per se, I think have been exaggerated. Any means of whatever character must be used with discretion. The tent, like the gauze, if too long contained in an infected cavity encourages retention and serves as a rallying gathering point for germs, etc. No skilled operator would think of leaving a tent longer than when neceasary dilatation has occurred. If it slips up into the cavity and is retained this will not defer the skilled from immediately correcting that; in the hands of the unskilled—there is but one remedy, acquire skill, otherwise all words, however well meant, are useless. One of the latest illustrations of tent (?) trouble is found well illustrated in the John Hopkins Hospital Reports, Vol. VI., plate VII., and illustrates very beautifully again the fact that the operator, not the tent, was the erring factor.

Concerning the further use of tents, Drs. Gould and Dorland, in the 1896 Year-Book of Medicine, p. 378, seem rather severe upon Drs. Mundé and Dudley. There the former refer to the latter's use of the tents as fortunately becoming obsolescent. Still I am not adverse to entertaining the opinion, however modest, that the former's opinion as to the obsolescence of the tent inclines to a less degree of the "fin-de-siecle" than is the case in that of Drs. Mundé and Dudley.

In these observations it will be noticed that I have given to the principles that should govern action in the treatment of ante-mature labors the more prominent place. It is determination of principles of technique, plan of action, rather than detail of execution that renders

the result. Yet in both cases of determination I recognize that the rule is not of so great importance as is the element of individuality to master, the degree of artistic talent to execute, possessed by and at the command of the operator. Again and again great stress is laid upon an instrument, a certain make, a peculiar twist, but here, like in all art, it is not the instrument, but the mind that guides the instrument that determines the masterpiece.

Columbus Memorial Building.

AN INTERESTING FIBROID TUMOR.

By August Schachner, M.D., Ph.G.,

Demonstrator of Anatomy, Louisville Medical College.

The following case I believe interesting enough by reason of its location and the peculiarity of its operative management, to justify its publication.

Mrs. E. O. was referred to me through the courtesy of Dr. Carl Weidner. She gave the following history: Age, fifty-four. Married twice. Three children. She was accustomed to doing vigorous housework. Her menstrual history presented nothing of uncommon interest.

Upon external examination an enlargement occupying the median line and reaching within one-third the distance of umbilicus was observed. The date of the discovery of any tumor in this locality could not be clearly made out from the patient's statement. In addition an inguinal hernia was revealed by this examination. This was of some years standing, and for which the patient had been imperfectly trussed.

Upon vaginal examination it was impossible to detect the cervix, and in its place could be felt a blunt conical mass, measuring in all probably six centimeters in diameter and representing the lower end of the tumor. Sweeping the finger around this mass it was noticed that posteriorly the roof of the space between the surface of the tumor and the vaginal wall could easily be made out. This was impossible anteriorly. Such evidence might have led one to suspect that it was attached to the posterior vaginal wall and had pushed the uterus upwards. The presence of the rounded end of the tumor where the cervix should be, on the other hand made it not altogether impossible that

it might be a submucous fibroid that had forced itself out of the cervix. Especially upon sweeping the finger around the mass could the sensation of an annular constriction be made out. With and without the aid of the speculum it was impossible to gain any additional information

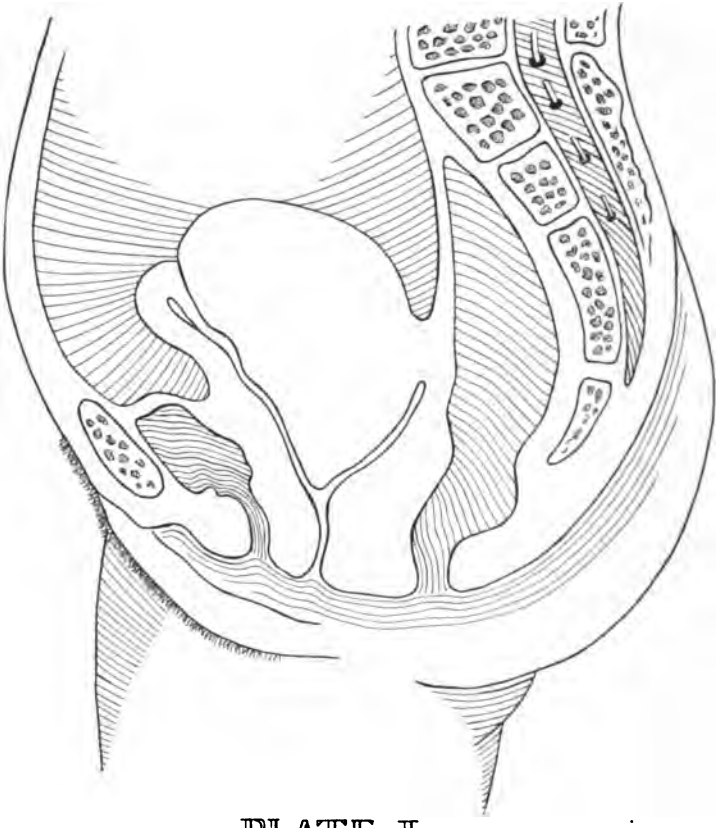


PLATE II

Showing location and relation of the tumor.

other than that already set forth. By combined manipulation but limited mobility was made out. So that after the most careful examination the pre-operative bearings were at best quite indistinct.

Operation.—Upon opening the abdomen the presenting mass was pear-shaped in outline with the large end upwards. The pelvic end practically filled up that basin. The lack of space, together with the limited mobility of the mass, made it impossible even at this stage to

get a clear idea of the anatomical relations. After considerable manipulation and the use of no small amount of force, the tumor was in the main delivered. The appendages were easily located, but the outline of the uterus was not so distinct.

After some examination it became apparent that the greater part of

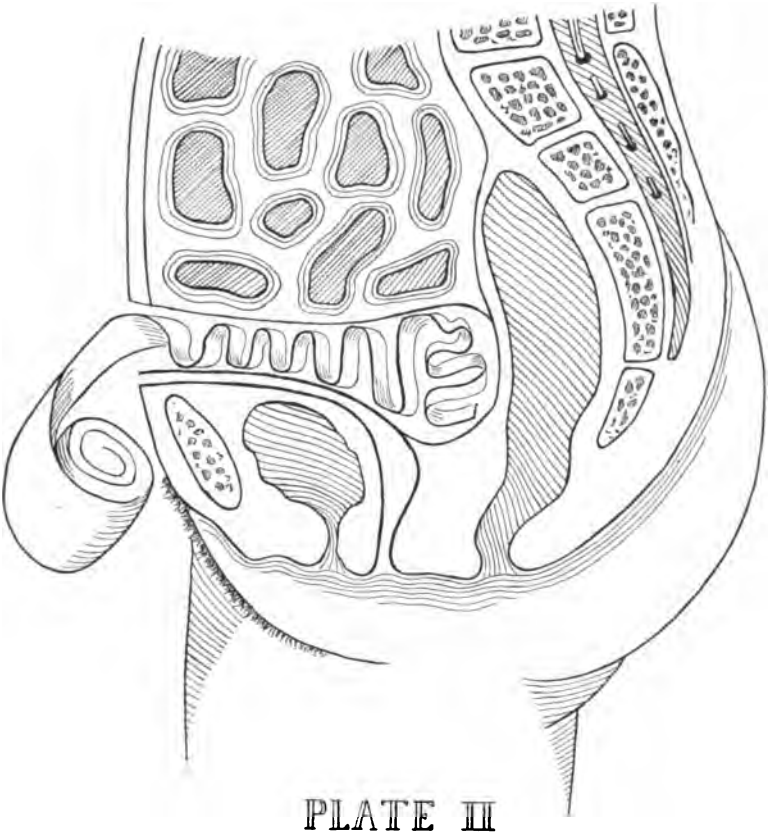


PLATE III

Showing the operative management of the tumor.

the tumor was within an enormously distended and elongated vagina, this distension and elongation being occasioned by a gradual growth along the points of least resistance, namely: Upward and forward. The uterus of normal size was located at the upper and anterior extermity of the tumor. The growth of the tumor had, however, crowded it out of the pelvis into the abdominal cavity. A flap of peritonæum representing the recto-uterine fold was

dissected away and brought forward and upward to the anterior parietal peritonæum, to which it was sutured by means of fine catgut. This practically closed in the general peritonæal cavity. The tumor was

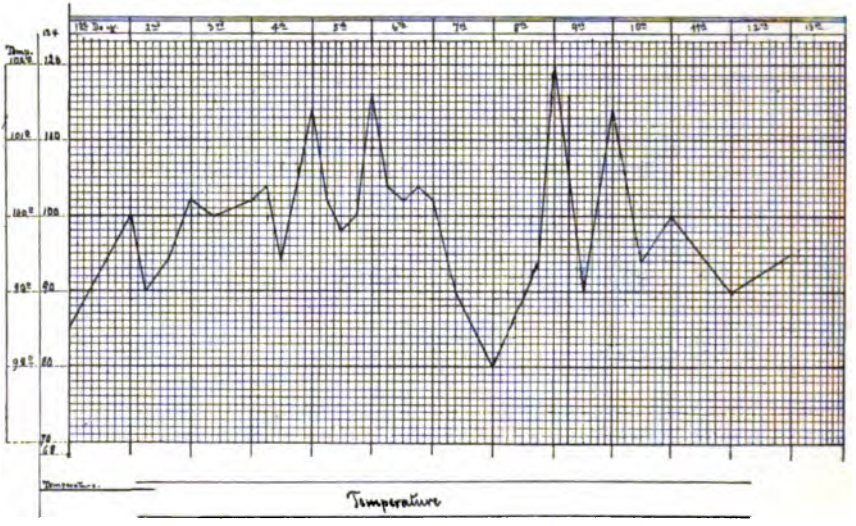


PLATE III.

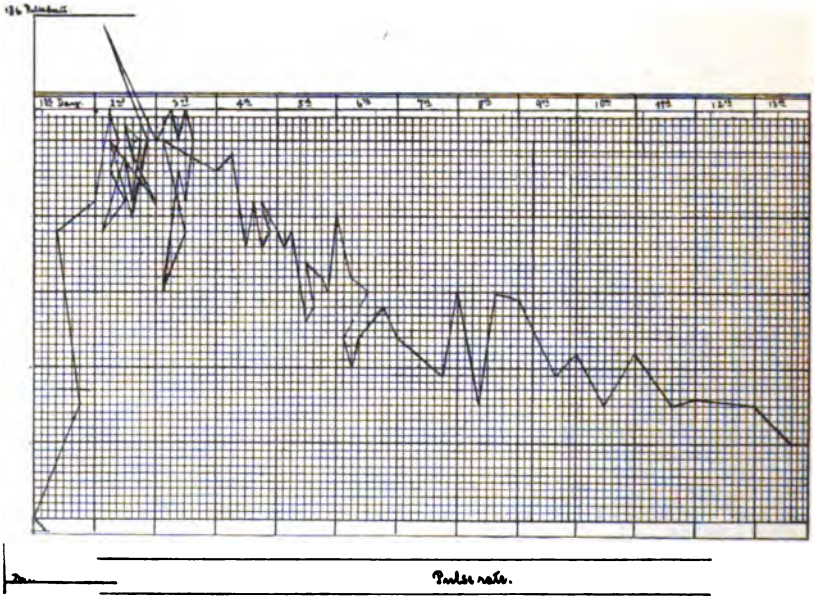


PLATE IV.

freed from its vaginal attachment, the severed vagina was closed by means of a double row of sutures, and then sutured to the edge of the abdominal wound; lastly to insure against any sagging that might give rise to an infection, it was anchored by means of hysterectomy pins passed two centimetres beneath the sutures and resting upon the opposing sides of the abdominal wound. The space between the peritonæal flap and the vaginal wall was loosely filled with iodoformized gauze.

The post-operative course of the case was, considering the attending circumstances, unusually regular. The iodoformized packing was changed every ten hours during the first three days. At each of these dressings, the cavity was carefully irrigated with Thiersch's solution. After the first three days the intervals between the dressings were prolonged. That portion of the wound above the vaginal attachment healed primarily. The lower segment for the most healed by granulation. For a few weeks some sinuses leading into the vagina remained. The pulse before the operation was 68, after the operation its maximum was 136. The maximum temperature was 102°.

After the thirteenth day the case continued a normal course..

NEPHRECTOMY.*

By P. F. Chambers, M.D., New York.

The operation of nephrectomy, first performed in 1869, for a urinary fistula, the operator being Gustave Simon, is properly out of the domain of gynæcology. But most gynæcologists are now abdominal surgeons. In fact, the first abdominal surgeons were gynæcologists, and those surgeons who have done most towards perfecting operations in the abdomen have been gynæcologists. Considering this, it is fit that the diagnostic symptoms for diseases other than pelvic troubles, as well as the technique of the operations for their relief, should be brought before gynæcological surgeons.

Within the last two years it has been my good fortune to have to operate for the removal of three pus kindneys, and to assist in one case of hydro-nephrosis. I have tried the three methods usually rec-

*Read before the Woman's Hospital Society, February 15, 1898.

ommended, and my purpose now is to describe the technique of the three, and from my experiences, report to you the advantages of each.

But first a few words regarding diagnosis: The first and chief diagnostic symptom is the presence of a tumor in the region of the kidney; and, if pyo-nephritic, pus in the urine constantly—or as sometimes occurs, only intermittently; more or less pain referable to the back and side; and the other general symptoms of the presence of pus; loss of weight and strength; chills, fever and night-sweats.

Pain is not as common a symptom as might be imagined, and its absence is not a contra-diagnostic symptom. In three of the cases I have in mind, it was absent. In the second and third cases, there was no pus in the urine. In the other two there was pus, and as there was acute cystitis, the pus was supposed to come from the bladder.

A short history of each case will serve to bring out fully the interesting points.

The first case, Mrs. N., aged 30, but three months married, a telegraph operator by profession, came to me complaining of a "lump" on the right side just below the ribs. She had been ailing for about six months, and as the symptoms were very obscure, her physician thought at one time that she was beginning typhoid fever. But she apparently recovered, and then married. Soon after her marriage, however, the symptoms returned, and with them, the lump in her side. From the time she began to complain until the lump appeared, she had had more or less cystitis. After the appearance of the lump, the cystitis discontinued. She had lost flesh; had a rise of from one to three degrees temperature each day, with an occasional chill..

I diagnosed the trouble at once a nephritic tumor, and advised an operation. I thought it hydro-nephrosis, and as it was very large—extending beyond the umbilicus—I decided to go for it by the abdominal route.

An incision was made in the median line from the sternum to below the umbilicus. When the abdomen was opened, the tumor at once protruded, pushing before it the posterior peritonæal wall. I cut through that layer, but before tapping the tumor, I packed pads all around and then I sewed the posterior peritonæum temporarily to the anterior wall, thereby cutting off all communication with the general peritonæal cavity. The tumor was then punctured, and about a quart of vile-smelling pus was drawn off. The kidney being diseased, was then removed, and the ureter and blood vessels ligated with silk ligatures. A contra opening was made in the back for drainage, but as some pus escaped upon the anterior opening, it was deemed advisable to drain from that direc-

tion also. The cavity from which the kidney was removed was filled with iodoform gauze—one portion draining by an end through the back, and the other through the anterior opening.

The patient made an uneventful recovery; the gauze was gradually removed, and the anterior opening rapidly closed; but the posterior opening continued to drain for three weeks, when she left for home. One year later, which was last summer, she came to see me again, and stated that the posterior opening was still draining; and she mentioned as curious the fact that when she ate berries, the seeds would come out of that opening. I did not believe the statement, but thought it probable that a ligature was keeping up the drainage, and decided to enlarge the opening, and remove it. With a tent the opening was enlarged sufficiently to admit a blunt curette. Nothing was removed, however, excepting a quantity of granulating tissue, but there seemed no bottom to the fistulous tract. In other words, I felt assured that I was in the intestine. The next day, at my request she ate berries, and later I found upon the dressings the seeds. She began, however, to improve, and soon the opening closed, and at last accounts, was still closed.

My second case was that of a boy whom I saw by chance at night in a miserable hut in the country. The history obtained from his family was as follows:

A week previous he had mounted his bicycle for the first time after a three weeks' illness with pneumonia, and rode four miles. In jumping from his wheel, he was attacked suddenly with a severe pain in the right side; so severe was the pain that he had to be lifted up, and taken home in a wagon, and a physician summoned in haste. The doctor told me that on his arrival he found the boy in agony, and had at once given him a hypodermic injection of one-fourth grain of morphine, which he has repeated at intervals ever since, with only partial relief.

Upon entering the room, I gazed upon a truly pitiable spectacle. A boy of eighteen years tossing and writhing in agony, and begging for any form of relief. I do not think I ever saw so helpless a case of suffering. His pulse was 160, and temperature 104°. A tumor the size of a child's head was found in the right side just below the ribs. Although we all recognized the gravity of the case, and gave a very poor prognosis, an operation was decided upon.

Within an hour the patient was etherized and upon the table, and without another assistant, and by the light of a dim lamp, I undertook the difficult operation. A circular incision was made just below the ribs, extending from near the sternum backwards almost to the spinal

column. The peritonæum was then pushed downward and forward, so as to allow of reaching the tumor without entering the general peritonæal cavity. The tumor was then punctured, and a large quantity of putrid urine drawn off. The kidney was greatly enlarged and out or place, in fact, the tumor was scarcely more than a distended sac, but little kidney tissue apparent, so it was decided, as the most rapid way to dispose of it, to remove it. Ligatures were rapidly applied, and a contra-opening made. The cavity was filled with gauze, and the anterior opening closed.

We thought he would die upon the table, although the operation was performed in less than an hour, with little loss of blood. The patient, however, did not rally, but died before morning.

My third case was that of a man upon whom I operated only two weeks ago. He is thirty-four years of age, and of good family history. Four years ago he began to have trouble with his bladder, and had been treated ever since by different physicians for cystitis—the bladder being washed out in addition to internal medication. He had received no benefit from treatment, but, on the contrary, had grown gradually worse, and had fallen in weight from 190 to 120 pounds. Last October he had to give up work, and had been confined to the house more or less since that time.

Three weeks ago he put himself under the care of Dr. Mitchell of Newburgh, who called me in consultation. Upon examination, the patient was found to be emaciated to a degree, and very weak. Temperature, 100°; pulse, 110. Upon the left side extending from the ribs to the crest of the ileum, and from the spine to the umbilicus was a fluctuating mass, which for three weeks, he said had been growing rapidly larger; no pain upon pressure, and in fact, at no time had pain been a factor in his trouble, excepting the pain in the bladder, which, by the way, had been very slight since the tumor had enlarged; and for the same length of time, the urine had been clear. The diagnosis of pyonephrosis having been made, and an operation advised, the patient readily consented.

With the assistance of Dr. J. A. Hartwell, and the Doctors Mitchell, the operation was performed on Thursday, February 3, by way of the lumbar route, it being deemed safer under the circumstances than either of the others.

The patient was placed in a semi-chest position, and a hard cushion placed under the loin on the good side. An incision was made about two inches from and parallel with the spinal column, extending from the twelfth rib to near the crest of the ileum, and along the cut for one and

a half inches. The fibres of the latisimus dorsi, external and internal oblique and aponeurosis of transversalis were cut through, and the quadratus lumborum pulled back. There was no peri-renal fat, but the capsule (which was very much distended and protruded) on being punctured, gave vent to about a quart of vile-smelling pus. The kidney was found to be thoroughly disorganized; it broke to pieces upon the slightest touch, and bled profusely. It was finally removed, but the hæmorrhage was so great, and the patient in such a precarious condition, that we thought it best not attempt to use ligatures, but quickly applied a clamp to the pedicle, and cut the kidney off. The cavity was then thoroughly packed with gauze, and partially closed with silkworm gut; the dressings applied, and the patient put to bed.

I would have infused had I had the apparatus, but not having it, I gave a large high enema of brandy and water, and hypodermics of brandy, digitalis and strychnia. He rallied from the operation wonderfully well, and though with a rapid pulse—140—it had a good volume, and by morning had slowed down to 120.

The dressings were changed and the gauze removed Saturday following; the clamps not until the next Monday. He has continued to improve steadily. The urine for the first day contained blood and pus, but has been growing clearer ever since. His appetite is very good, and, in fact, in every way, he is feeling better than before the operation.

In addition to my three cases reported in the foregoing, I had the pleasure of assisting Dr. Nicoll at the Woman's Hospital in a nephrectomy for hydro-nephrosis, a history of which Dr. Pinkham has kindly furnished me, and which I will now read: Mrs. B., aged 48. Admitted to Woman's Hospital January 17, 1898. Family history good. Menstrual life normal. Has had four children. Three years ago passed a small calculus in urine. For the past six years has noticed a movable lump in her abdomen, and within the last six weeks it has materially enlarged. Operation by Dr. Nicoll. An incision was made to the left of median line about four inches in length. The tumor, about the size of a child's head, was found to be on the left side and posterior to parietal peritonæum. The incision was carried through the posterior peritonæum and tumor easily pulled up after the firm adhesion was tied and cut. It proved to be a kidney degenerated into a sac containing urine, there being very little kidney tissue left. The uterer and blood vessels were ligated separatedy and the tumor removed. A counter opening was made in the back and cavity filled with gauze, the end protruding through the posterior opening. The post-parietal peritonæum was then closed with a running catgut suture, and the ante-abdominal opening

with silkworm gut. There has been no rise in temperature since the operation and the patient is now convalescent, the gauze being entirely removed and both openings closed.

By the abdominal route the kidney is more easily reached than by either of the others, and an opportunity is also afforded for the study of the other kidney: still, the danger of sepsis is much greater, owing to the probability of the pus coming in contact with the abdominal cavity; there is, besides, the possibility of a hernia, either anterior or through the posterior incision of the peritonæum. On these accounts I prefer the lumbar incision. Of course, there is danger of opening the peritonæum posteriorly, as well as the pleura, but with the exercise of due precaution, the danger is slight.

The lumbar operation is more difficult, and sometimes the kidney may be hard to find; but these are objections scarcely to be considered.

For a ligature I consider catgut preferable to silk; and I would, of course, always prefer to use ligatures—ligating the ureter and vessels separately. But if, as in the last case, the hæmorrhage is excessive, or if there is any reason to hurry the operation, the clamps are very satisfactory and expeditious. In all cases the drainage for the first three days should be very free, and in all severe operations it is advisable to be prepared to infuse. In neither of my cases was I able to trace the ureter. In all of them it was necessary to expedite matters as much as possible; and to have looked for an obstruction in the ureter would have taken considerable time, and nothing would have been gained, as the kidneys were removed. Of course, had the kidneys been left, the pelvis simply being opened to evacuate the pus, the obstruction should certainly have been located and relieved.

Another word regarding diagnosis, and I have done:

As I said before, pain is by no means a necessary symptom. Of the four cases reported, three were completely free from pain. It seems that when the trouble is slowly progressive, the disturbance may be attended with but little pain. In my second case, the kidney was undoubtedly displaced by the jump from the wheel, and the ureter thereby constricted; but the kidney continuing to secrete urine, the result was a rapid distension of the fibres, with accompanying pain.

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URETERO-VAGINAL AND URETERO-ABDOMINAL FISTULÆ.

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Introduction.

The occurrence of two ureteral fistulæ in my practice, led me to make an investigation of this interesting and comparatively rare surgical affection. In consideration of the large number of operations performed in close proximity to the ureters, it is indeed surprising that they are not more frequently injured. The literature of fistulæ of this nature, is limited and imperfect. The various surgical text books, refer to cases in a general way, or in illustration of some interesting feature in etiology or treatment. Many of the leading articles are characterized by the same generalization, and the reports of cases are astonishingly defective, in a large percentage of them.

From this chaos I have been able to collect sixty-five cases, and to add to the list, two of my own here reported, making sixty-seven cases in all as follows:

Uretero-Vaginal	60
Uretero-Uterine	4
Uretero-Abdominal	3
	67

This does not include fistulæ from the kidneys nor the uretero-lumbar and uretero-inguinal varieties. No cognizance is also taken of the various primary operations performed on accidentally injured ureters while operating upon the pelvic organs.

The ages of the patients varied from nineteen to sixty-four years, including those persons having the congenital forms.

In seventeen cases the ages are not reported. The average age is 34.2 years.

Ætiology.

In twenty-five cases the cause given is parturition; in sixteen of these forcep-delivery was performed. Vaginal hysterectomy was the

* Read before the Chicago Gynæcological Society, March 25, 1898.

cause of twelve cases; two cases were caused by stone in the ureter and ulceration; three by abdominal section; of one tramuatic origin; two by pelvic abscess; one by a pessary and one spontaneous, probably tubercular. In the rest of the cases, the cause is not given. Four congenital instances are reported.

The fistula was connected with the left ureter in twenty instances: with the right in fourteen, in the rest the side affected is not stated.

Operations and Results.

No operation was performed in ten cases. There were fifty-seven operated upon, and nine of these were not cured. One case had five operations performed on her, the last one being a success.

No cure was effected by cauterization, but harm was done by it in a few cases. Spontaneous recovery occurred in one case, but in it there was good reason to suppose the kidney was destroyed by calculi.

One death occurred after operation. Intraperitonæal implantation into the bladder was done in three cases, with success. One patient was cured by anastomosis of the ureter with the colon. A large number of vaginal operations were performed, from simple vivification and suture; to extensive plastic procedures.

The name of some operator is in most instances given to these operations, *e. g.*, Sims, Simon, Bozeman, Blandl, Landau, Schede, Baker, Campbell, Pozzi, Baey, Hergott, Emmet and others, whose names and procedures are well known to the profession.

Nephrectomy was performed nine times and successful. In this connection Samuel D. Gross (Am. J. Med. Sc., July, 1896) made a collection of fourteen nephrectomies for ureteral fistula of all varieties. Of that number eleven recovered and three died. Nephrotomy was performed once, for a septic kidney complicating a fistula.

Kolpocleisis was done three times, twice successfully. The cervix of the uterus was implanted into the bladder in one case with success.

Hysterectomy was performed in one case for a uretero-uterine fistula to convert it into a vaginal fistula.

The following is a report of my two cases, one a uretero-vaginal and the other a uretero-abdominal fistula.

(1.) *Case of Uretero-Vaginal Fistula.*—Mrs. A., 40, had vaginal hysterectomy, done by me in May, 1894, at Brandon Hospital, for septic uterus and appendages. She nearly died from the anæsthetic (chloroform and then ether). Three clamps were left, in the vagina, on

the broad ligament, two on the right and one on the left, which were removed by the late Dr. Fleming on the sixth day, who had the case in charge. She did well for three weeks, when an abscess formed in the right side of the pelvis, which the doctor lanced and packed with gauze.

In a few days a slough came away from the abscess cavity, and then a free escape of urine was noticed for the first time. It was quite clear that a right uretero-vaginal fistula had formed. After a few cauterizations and one attempt to pass a ligature around the ureter per vaginam all treatment was suspended until July, 1897, when she came to me to Chicago for the closure of the fistula.

The total secretion from the right kidney, was passing into the vagina. Upon inspection through a speculum, the orifice of the ureter was seen, situated at the extreme upper right portion of the vault of the vaginal canal, through which a small probe passed without difficulty.

On the 15th of July, 1897, I performed the following operation, on her at the Post Graduate Hospital.

Plastic operation for Uretero-Vaginal Fistula.

The patient was anæsthetized and placed in the extra-lithotomy position, before a good light. The proximal orifice of the ureter being so far away from the bladder, I decided to make a *cuff of vaginal mucous membrane to bridge over* the distance. This procedure was facilitated by the manner in which the ureter held the vagina upwards and to the right, not unlike an inverted funnel.

A circumferential incision was made fully three quarters of an inch away from the ureteral orifice and the vaginal mucous membrane dissected up to the ureter. While doing this the abdominal cavity was unavoidably opened through the old scar, and carefully closed so as to leave the ureter and its cuff of vaginal mucus membrane hanging free into the vagina. The next step of this operation was to make a semilunar incision through the vaginal mucous membrane and raise a large flap from the base of the bladder, forward and to the left. I then made an oblique cut into the bladder, a little above the normal opening of the ureter on the right side. The vesical mucous membrane was now sutured to the vaginal cuff at the end of the ureter with catgut, and each suture when tied, was pushed into the bladder, and taken out through the meatus urinarius, except the last one. It was tied on the vaginal side and cut short. All that remained to complete this plastic operation was to sew the semilunar flap raised from the base of the bladder, in place,

with silkworm gut, and thus cover the ureter and portion of vaginal mucous membrane attached to it.

The space from which the ureter was dissected was easily closed. A soft rubber catheter was placed in the bladder and retained there by tying to it the catgut strands passing through the urethra already mentioned.

The vagina was packed rather tightly with iodoform gauze. The packing was removed on the fifth day and again on the eighth, when the stitches were removed. *On the ninth day a leakage of urine was observed to come per vaginam from the bladder.* We had now a case of vesico-vaginal fistula to deal with. It was a mistake to remove the stitches so early. The fistula was very small. *On the 13th of August, 1897, the second operation was performed and no anæsthetic administered.* Cocaine was used locally. Flaps were made from the vaginal side and inverted into the bladder, and the vaginal wound closed with horse-hair sutures. Great care was taken in packing the vagina, using two packings with a powder-diaphragm of equal parts of boracic acid and iodoform, between them. This allows of the external packing to be renewed several times, while the inner one is left undisturbed.

The next day I left the city on an extended trip, and did not see her again for nineteen days, when to my delight, all union was complete. The inner packing had not been disturbed during this time. The horse-hair sutures were now removed, and found to have caused no irritation. The catheter could not be left in the bladder constantly on account of the cystitis that developed. For two weeks longer she remained in the hospital for treatment of the cystitis, which nicely subsided. This lady is now in excellent health, and cured of her fistula.

(2) *Case of Uretero-Abdominal Fistula.*—Mrs. M., age 36, referred by Dr. E. M. Brown, had been married for fourteen years, had one child and one miscarriage. Her menses had always been painful and she had several attacks of pelvic inflammation; the abdomen was enlarged, and by examination two cystic tumors were made out. On the 27th of July, 1895, an abdominal section was made by me at the Post Graduate Hospital, assisted by Dr. Brown and Dr. Tichenor. The two ovarian cysts were enucleated, with much difficulty on account of firm and extensive adhesions of them, to the pelvic wall, bladder, and rectum.

At five o'clock the next morning, hæmorrhage occurred and I had to open the abdomen, suture a few bleeding points, and pack the pelvis with gauze. After this she made a slow recovery. On the seventh day urine was detected in the gauze and the ureter probably had been

leaking a little for a couple of days previously. In a couple of days after this all the urine, from the right kidney, was finding its exit through the wound in the abdomen. That there was no communication with the bladder was determined by distending that viscus with fluid.

Some three months later Dr. Brown brought her back to the Post Graduate Hospital, and I performed the following successful operation:

Operation for Uretero-Abdominal Fistula.

A transverse incision was made through the right rectus muscle, which exposed the fistulous track from its suprapubic cutoneous opening in the median line, down to a firm mass to the right and posterior aspect of the bladder. A probe was passed through the sinus into this mass, and it was found to contain a cavity holding about half an ounce of urine, into which the ureter opened. The surrounding wall was about a quarter of an inch thick. When an oval piece was removed from its upper and anterior surface along with the sinus, and the urine carefully mopped out, the opening of the ureter into it was observed.

Immediately opposite, and on a level lower than the opening into the artificial cavity, an incision was made into the urinary bladder just large enough to allow one to raise the upper lip of the bladder wound and place it over the mass at the end of the ureter and where it was sutured with catgut.

Iodoform gauze was packed around the sutured area and the abdomen closed with silkworm-gut except at the point of exit of the gauze.

The first packing was removed on the third day, and afterwards every twenty-four hours. On the eighth day the gauze was soaked with urine, and continued to be saturated with it more or less for four or five days, and then ceased. The oozing of urine was probably due to stitch holes in the bladder, possibly aided by the catheter being removed too soon.

The wound rapidly closed and she is now perfectly well. I was apprehensive of the behavior of so large a mass of cicatricial tissue within the bladder, but inasmuch as no cystitis nor even vesical irritation followed, I should not hesitate to perform the same operation again.

The abdominal wall at the seat of operation is not as strong as before and it has to be supported.

Of uretero-abdominal fistulæ, in addition to my own, I can find but two cases, which is remarkable, inasmuch as references are made to it

as a condition occurring in the practice of many surgeons. Transplantation or engrafting of the ureters and the formation of ureter-abdominal fistulæ are mentioned.

Conclusions.

From a study of these sixty-seven cases of ureteral fistulæ let me draw the following conclusions:

1. The left ureter is more frequently the seat of trouble than the right.

2. The most frequent variety is the uretero-vaginal and the rarest is the uretero-abdominal fistula.

3. The most common cause is difficult labor; and forcep-delivery is a prominent ætiological factor.

4. Of all the operations performed in the pelvis, vaginal hysterectomy is the most frequent cause of ureteral fistula.

5. Other conditions being favorable all cases of ureteral fistula are curable by operation. (a) In all cases of uretero-vaginal fistula the direct method of operating should be selected and no particular operator's method is applicable to all cases. When the ureteral opening is situated close to the bladder, Schede's operation is the most surgical and is applicable to the greater number of cases; when situated far away from the bladder, as in my case, a plastic operation on the principles carried out by me, should be tried before a graver or more mutilating procedure is thought of. Intra-peritonæal operations are suitable for the abdominal fistulæ.

6. For the cure of uretero-vaginal fistula, it is in my opinion assolutely injustifiable to perform hysterectomy, nephrectomy or colpocleisis. When septic infection of a kidney occurs it may be necessary to open, or remove it.

It bespeaks lack of surgical ability to remove a kidney, a uterus, or close a vagina in these cases of simple fistula.

7. Another procedure which I think uncalled for is transplanting of the cervix uteri into the bladder for the treatment of uretero-uterine fistula, for it causes sterility and the menstrual flow is abnormally directed and besides a disturbed bladder might cause a backward flow of urine into the uterus, fallopian tubes or even peritonæal cavity, depending upon the condition of the organs.

8. Directing the urine into a bowel is only justified when any other operation cannot be performed. While uretero-enterostomy has been successfully performed, it has but little to recommend it, on general principles.

Bibliography and Notes.

1. Alquié (*Hosp. tid. Kjovhenh*, 1860, III., p. 101). Woman, aged 40. Difficult labor, lasting thirty hours. The dribbling of urine commenced about three days after labor. Uretero-vaginal fistula, the left ureter being involved. No operation attempted. No subsequent history given.

2. Billroth (*Archiv f. Klin. Chir.*, Berlin, 1894, XLVIII., 639-682). Woman, 45 years of age. Previous operation for cysts in the broad ligaments by Carl von Braun in 1888. Under navel a fistula in the otherwise healed wound from laparotomy, through which the probe with little difficulty could be passed close to the right kidney. In its vicinity a large ulcerated place, so hard that it was thought there might be an epithelioma arising after an obstinate eczema. The ulceration became smaller after the use of liquid caustics, the vicinity softer, so there was soon only an eczema. Chloroform narcosis. Operation for kidney extirpation. Section from twelfth rib in curve to spine anterior superior; kidney fast in adhesions; peritonæum opened eight centimetrs to reach it from inner side; so many adhesions that kidney extirpation was given up. Incision made from convexity of the kidney into the parenchyma, which bled a little. A dressing forceps introduced and the kidney basin opened; flow of pus; connected with fistula; pus cavities closed, and sections of skin muscles closed. November 8, 1893, favorable, but in March there was still a small fistula. Previous operation, July, 1888, by Carl von Braun, for intraligamentous ovarian cysts on both sides. The effect of the operation, detailed at length, upon fistula was favorable, but the dripping never entirely ceased. These operations seemed to regard the fistula as secondary only, and the cure of the pyelonephritis as primary.

3. Baker (*New York Med. Jour.*, 1878, p. 575). History not given. The opening of the left ureter was two lines to the left of the meatus. The ureter was dissected free after its most distal part had been laid open, like an ordinary fistula. An incision was made into the bladder, and the ureter fastened into its wall. Recovery. One year later a stone, due to a former suture, was removed from the bladder.

4. L. Seeheyron (Soc. cit.). Three weeks. Right ureter opened quite close to, but distinct from the meatus. No operation.

5. L. Sheeheyron (*Archiv de Tocol.*, Paris, 1889, XVI., p. 254-335). Female. Congenital opening of the ureter (which one not stated) at the side of the urethra. The right ureter or a bifurcation of it, opened to the right of and below the meatus urinarius. No operation.

6. Alquié (*Bulletin Soc. de Chir.*, Paris, 1856-7, VII., p. 454). This case is the one operated on by Blanc, and though Alquié reported it, he has not the right to be classed (as he is) as the possessor of the case.

7. Bandl. (*loc. cit.*). Female. Bozeman's method again employed. Recovery. A small opening still remains, which will be cured at some future day without much difficulty. Bandl here states that in Brun's clinic he cured in Bozeman's manner fifteen cases, in addition to two cases in his private practice.

8. Bandl. (*loc. cit.*, 1876) female. Patient had been operated on before unsuccessfully. The fistula had formed at a point a short distance above its former site. A circular cut was made around the opening of the ureter. Some tissue was dissected up toward the bladder from the vagina. A new opening was made into the bladder, and a catheter introduced into both the bladder and ureter. This permitted the formation of a groove. This was closed over by wire sutures, and the urine was caught from each ureter separately for three days. August 12, 1876, recovery.

9. Bandl. (*Wein. Med. Woch.*, 1878). Female. Traumatic origin; uretero-vaginal fistula. Longitudinal incision in vaginal ball from the opening of the ureter toward the bladder two centimetres long. Then he opened the bladder, pressioned the tissues in the vicinity of ureter, passed a catheter through the bladder into the ureter, and then closed the vaginal wound with silver sutures and plates, after Bozeman's method. First operation failed, and another proved necessary. First operation, June 30, 1876. Date of second not given. From context, probably several months later. Cured. Sutures removed on the seventh day. Some urine escaped from the upper end of the wound at this time, and about a month later the fistula was fully re-established. A second operation, after Bozeman's method, resulted in complete cure.

10. Auguse Berard (*Dictionaire de Médécine*, 1846, XXX., p. 499). Condition resulted from difficult labor. When first seen the condition had lasted two years. There was an almost continual flow of urine from the uterus, and this was lighter in color than was the urine passed per urethram. Occasionally this flow stopped, usually for twenty-four hours, and was then followed by severe pains in the lumbar regions, disappearing only when the involuntary blood recommenced. No operation. This is the first case of uretero-uterine fistula recorded.

11. Blanc. (*Mon. d'Hôp.*, 1857, p. 581). Seven or eight days after the last confinement patient had noticed discharge of urine per vaginam. This labor had been tedious, and forceps had been used. Orifice

was not discoverable either by visual or tactile examination. Cauterization with nitrate of silver. No benefit.

12. A. T. Cabot (*Am. Jour. Med. Sci.*, 1892, n. s., CIII., 43-54). Female, aged 39. Patient had had numerous attacks of nephritic colic. Last attack was accompanied by lodgment of stone over vault of vagina, in the left ureter. When the stone was dislodged, a purulent discharge began, and coninued through the uretero-vaginal fistula for about six months. No urine was passed at any time, showing that the kidney had been entirely destroyed. The fistula at length closed spontaneously.

13. Chaput. (*Archives Générales de Med.*, Paris, 1892). Female. Vaginal hysterectomy had been performed, and the ureter wounded. An uretero-vaginal fistula resulted from wounding the ureter. The opening was so high up that any attempt to make the ureter recommunicate with the bladder had to be abandoned. Incision in left iliac fossa from above the anterior superior spine of ileum to the median line. Peritonæum opened and its posterior layer divided on a line ten centimetres in length, parallel to the insertion of the meso-colon. The peritonæum was reflected as far as the vertebral column. One of the iliac veins was opened by mistake for the ureter. Ureter found greatly distended. It was divided between two clamps. Orifice of the posterior and renal portion of the ureter made to meet the colon on its posterior and lateral aspect at a very acúte angle. A row of sutures uniting the serous layers of the two structures along the posterior semi-circumference was inserted. The intestine was then incised in a direction corresponding to the uretral orifice and the mucous layers of the two viscera united by sutures. The anterior serous coats were coapted, and the vesical portion of the ureter closed by catgut ligature. The abdominal wound was closed by a single row of catgut sutures. September 13, 1892, recovery. No complications. A year later the amount of urine passed per urethra was 1250 c. c. daily. Urea, 24 grs. per litre. Liquid material voided per rectum, 270 c. c. Three fluid movements occur daily. Solid matter held in suspension. These passages are easily retained in the rectum, causing no discomfort. The left kidney is not enlarged.

14. Credé (*Same as Zweifel*, N. M. A.). Woman, 26 years of age. Two years before difficult parturition, followed by parametritis of three weeks; second parturition December 27, 1879; forceps. Child dead; two days of retention of urine. Uterus normal in regard to size; but fixed at the right by scars; no exudate around the collum uteri; pelvis somewhat contracted. Nephrectomy, with ligature of the stump en masse. May 19, 1889, entire recovery in nine months. There were fifty

unequal large suppurative parenchymatous foci in the kidney, which was of normal size; suppurative pyelitis.

15. L. Duclout (*Gaz. Méd. de Paris*, 1869, 35 XXVI., 43-68, III., 169). Female, aged 19. Two days after labor patient had noticed involuntary discharge of urine. Forceps had been employed after two days' labor. No orifice of fistula discoverable. Urine escaped per uterum. No operation attempted; no improvement.

16. Duplay (*Bullet. Mem. Soc. de Chir.*, Paris, 1889, n. s., VI., 93-97). At second confinement forceps had been used on account of labor having been very difficult. Fistula did not become apparent until five days after this operation. A vesico-vaginal fistula was diagnosticated. Cauterization was practiced several times. After the last one, several sutures were inserted, and the discharge of urine stopped. After five days chills occurred with fever and general swelling of the vulvæ. Death. Autopsy did not reveal any condition which could be traced to the derangements of the urinary organs of sufficient gravity to cause death.

17. Gonzales Encinas (*Rev. de Méd. y Chir. Pract.*, Madrid, 1877, L., 465). Female, aged 30. Patient had been in labor six days, after which the uretero-vaginal fistula became apparent. The neck of the uterus was found obliterated. The fistula communicated from the upper and back part of the vagina with the left ureter. Three operations, each of which was partially successful. The method is merely described as the method adopted by Sims. First operation, January 22, 1877. Recovery complete four months after first operation.

18. Emmet (*Principles and Practice of Gynæcology*, 1880, p. 655, and 1884, p. 857). Female, aged 21. Patient had an attack of pelvic cellulitis of extreme severity. She had a uretero-vaginal fistula of left ureter. There existed an opening from the bladder into the vagina, such opening, however, being high up on the bladder wall. The tract of the old abscess was patulous to a slight degree. The opening of the abscess tract into the vagina was closed, and the end of the divided ureter attached to the abscess tract so that communication might thus be established. The formation of a vesico-vaginal fistula had been employed. This was closed at a later operation. November 6, 1875, recovery.

19. W. A. Freund (*Berl. Klin. Woch.*, 1869, No. 47). Two years before observation had been delivered of a mature, but decomposed, child. One year later had the forceps applied for two hours continuously in the delivery of another dead child. At first urinated as usual, but eight days after labor, with complete continuance of the bladder, involuntary passage of urine occurred. At first, this was found cloudy;

later clear. Once, after six weeks, and again for a period of fourteen days, this flow stopped. Surface surrounding the fistula was denuded and cauterization tried. The uterus is flexed to the left and fixed by a prolonged cicatrix to the left pelvic wall. This cicatrix arose from the supravaginal portion of the cervix, whose cavity was exposed through a deep cavity in the left side. The urine was seen to ooze from the fissure in the left side in small jets. A fine slit was found about 1 to 1.5 centimetres long, and it was through this that communication with the ureter had been established. In all these cases of uretero-uterine fistula the left ureter was involved, and this is also the rule in uretero-vaginal fistulæ. This fact was probably due to the rotation or first position of occiput toward the left side. Diagnosis rests on the retained control of the bladder, with continual dribbling of urine, on the involuntary flow being continual, and that in whatever position the body may be put, a colored fluid injected into the bladder does not escape except through the meatus.

20. W. A. Freund (*Soc. cit.*). Patient had been rachitic from earliest childhood. Was delivered September 27, 1862, with forceps. Age 27. Child dead. Patient had had several eclamptic attacks. During eighteen days urine was passed by bladder and by uterus, when patient died of acute tuberculosis. No operation. Third case of uretero-uterine fistula. At the autopsy miliary pulmonary tuberculosis with Bright's disease in the second stage was established. The left ureter at a point twenty-seven centimetres below the pelvis of the kidney, i. e., at its entrance into the parametrium, was hydronephrotically enlarged, and attached along its course for a distance of six centimetres by a parametric exudation to the neighboring cellular tissue and to the cervix uteri. In nearly the middle of this segment it showed in an enlargement (i. e., a dilatation) of nearly one inch diameter, a decided loss of substance. From this an opening, the fineness of a hair, led into the cavity of the cervix uteri. The cervix had been destroyed by ulceration. Below this spot the ureter was narrow, above it was larger than normal, the size of a swan quill. The left kidney was hydronephrotic. The right one was normal. The bladder was slightly atrophied.

21. W. A. Freund (*Klin Beitr. z. Gyn.* Hft., IV., 2 s. 108, n. 14). Patient, aged 30, was with difficulty delivered with forceps in April, 1868. Immediately thereafter urine was passed involuntarily, and this continued without interruption along with normal activity of the bladder. Fourth case of uretero-uterine fistula.

22. Fritsch (*Same as Zweifel*, N. M. A.). Woman, aged 25; primipara; forceps delivery of twenty-four hours duration; child dead. Portio-

vaginalis wanting; a crater-shaped depression at the right of the vagina, from which the urine dripped; right ureter affected; also vesico-vaginal fistula. Lumbar nephrectomy; ligature of the stump en masse; the removed kidney was normal. October 31, 1885, condition of patient good. Incontinence ceased with the operation. Recovery. Colpocleisis previously tried.

23. Geyl (*Volkmann's Sammlung, Klin. Vort.*, 1892, No. 37). Female. Difficult labor, in which forceps had been used, was the cause of the condition. There was an uretero-vaginal fistula of one ureter; and uretero-uterine fistula from the other. The uretero-vaginal fistula was treated by denudation of the surface around the orifice, incising the bladder, and denuding the surface around the incision, and then coapting these denuded surfaces. The attempt to close the uretero-uterine fistula failed and was not repeated. The uretero-uterine fistula was not cured. The uretero-vaginal fistula was cured completely. There are two methods of treating uretero-vaginal fiistulæ when the duct itself cannot be implanted directly into the bladder. First, Emmet's method consists in using the bladder wall to make a new passage to the bladder. Second, the vagina may be closed. This is especially serviceable when the uterus has been extirpated.

24. Hann (*Same as Zweifel*, N. M. A.). Woman, aged 38. First parturition difficult, with forceps; incontinence of urine third day after labor. Much urine from both sides; fistula could not be found; when attempt was made to dilate the cervix, great pain in the left kidney. Diagnosis; uretero-uterine fistula on right side. A vesico-vaginal fistula cœxisted. Operation for vesico-vaginal fistula performed before the ureteral fistula was attached. The details of the operation for ureteral fistula not given. February, 1876, date of operation for vesico-vaginal fistula. Hahn brought the right ureter in connection with bladder in June, 1879.

25. F. Krause (*Centralbl. f. Chir.*, Leipzig, 1895, XXII., p. 220-226). Woman, 39 years of age. Extirpation of uterus by Schuchardt's method. First results of first operation good; four days after temperature rose; the urine from bladder diminished to 400 c. c.; the patient was wet in bed, no doubt the formation of fistula of ureter emptying into the vagina. Laparotomy. Fistula four to five centimetres above the bladder opening. Tuffier's and Tauffer's method. Ureter resected and intraperitonæal implantation in the bladder. October 5, 1894, complete success. No symptoms of anything abnormal. Woman works for a living.

26. Iverson (*See Zweifel*, N. M. A.). Woman, 31 years of age.

Fistula resulting from birth of child weighing ten pounds. Forceps used. Uretero-vaginal fistula, the left ureter being involved. Nephrectomy of the left kidney was practiced. June 13, 1891, recovery. The kidney when removed was found enlarged, anæmic and soft.

27. L. Landau (*Archiv. f. Gyn.*, 1876, IX., 426-436). Woman, aged 40. Patient had two labors, first followed by puerperal fever, second requiring the use of forceps. It was after the second labor that the fistula occurred. Patient had suffered prolapse of pelvic viscera from overwork. Uterus prolapsed, but of normal size. On the left of the vaginal wall was a fistula opening immediately in contact with the neck of the uterus. No operation. The fistula was permeable to an elastic sound, which was passed into it a distance of 20 c. m.

28. L. L. McArthur (*Tr. Ill. Med. Soc.*, Chicago, 1889, XXXIX., p. 402-409. Also Med, and Surg. Reporter, Phila., 1898, LXI., p. 225-228). Female, aged 11. Fistula since earliest childhood. Four years ago had scarlet fever, and a calculus was then found in the vagina of phosphatic nature. Fistula possibly congenital. Three small fistulous openings were found below the meatus urinarius. Two of these led into or just beneath the urethral mucous membrane. The third one communicated directly with the ureter, and had no relation with either the bladder or urethra. At the first operation these three fistulæ were opened as one would a fistula in ano; two healed. The third one did not, and the fistula then opened into the vagina. At the second operation the bladder was distended with water. A probe was introduced into the ureter, which was dissected from the vaginal wall for an inch. A lithotomy staff was then put into the bladder, and an incision made through the base of the bladder large enough to admit the water at the point where it would normally enter. A catheter was then introduced into the bladder and into the patulous ureter, while this was being sutured in place by silkworm-gut. After treatment consisted in use of benzoic acid and saccharin with salicyclic acid.

29. Netzel (*Same as Zweifel*, N. M. A.). Woman, aged 24. Two previous parturitions. Third, unconscious; delivered by forceps; seventeen hours after beginning and twelve after bursting of membrane; child's weight, 8½ pounds, and was dead. Could not reach promontorium sacri on right side with finger; vagina towards the left pelvic wall, ending in a crater-like cavity; diagnosis, uretero-uterine fistula. On the left front portion of the cervix a small fistula was observed. Vagina was bifid. Nephrectomia lumbalis sinistra, April 21, 1886. July 13, wound healed and urine normal; since the operation incontinence ceased.

30. Reported by Pana (*Gaz. d'Hôp.*, 1860, XXXIII., 273). Woman aged 42. Had borne five dead children. During the last labor forceps used for one hour; patient in labor two days. Absence of vesico-vaginal fistula established by the usual injection of colored fluid. The fistula was in the left side of the fornix vaginæ toward the posterior wall. Several cauterizations were attempted, and finally sutures were inserted in an attempt to close the external orifice of the fistula. No improvement.

31. Theophilus Parvin (*West, J. M.*, Indianap., 1867, II., 603-609). Female. During her ninth and last labor patient had been in labor four days. A hydrocephalic child was then removed. Patient was very ill for several weeks. The orifice of the fistula, though on the right side, leads toward the left. Patient first operated on by Simon's method. Unsuccessfully. Four other successive operations failed, and the last one resulted in a vesico-vaginal fistula. The features of the last operation were the dissecting up of a strip of mucous membrane, the leaving of a margin toward the left, where the ureter opened, and a freshened surface for adhesions was obtained completely outside the fistulous edge. The superior freshened surface enhanced a part of the anterior lip of the wound. May 18, 1867, recovery, the first successful one in America.

32. Pique (*Med. Bull.*, 1893, p. 591). Female, aged 33. Patient had suffered from pelvic suppuration. Hysterectomy and ablation of the right appendages were practiced, and as the ureter on the right was wounded a fistula resulted. Fistula opened at the bottom of the cicatrix. After several months severe pains developed in the left kidney with great swelling of that part. Nephrectomy of right kidney practiced. Recovery.

33. A. Puech (*Gaz. d'Hôp.*, 1859, No. 39). Patient had been delivered with severe labor each time of three dead children, after a labor lasting six days of her fourth (dead) child. During the last twenty-four hours the child's head had been at the vulva. Incontinence of urine began on the third day, but at the same time she could urinate voluntarily December, 1857. No operation attempted. The second case of uretero-uterine fistula recorded.

34. Routier (*Bull. et Mem. Soc. de Chir.*, Paris, 1893, n. s. XIX. 309-315). After an acute attack of oöphoritis, which was treated by vaginal hystero-oöphorectomy, on the fifth day a fistula was established between the right ureter and the vagina. The right kidney was movable and the site of these infarcts. Nephrectomy

was practiced. Recovery from the fistulous discharge of urine, but the ureter just above the fistula continues painful.

35. Simon (*L'Union Méd.*, 1857, p. 191). Woman, aged 34. Had borne four children. At the fourth labor, whence the fistula dated, no instrument was used. A vesico-vaginal fistula also formed at this time. The right ureter was affected. The vagino-vesical fistula was cured in the usual manner. Attempts were then made, at two sittings, to coapt the freshened edges of the fistula, but the occurrence of nephritic colic showing that the ureter was occluded, in each case demanded removal of the sutures. At the second operation an attempt was made to inaugurate the ureter into the bladder. No improvement of the ureteral fistula.

36. Treub (*See Zweifel*). Woman, aged 22. Difficult delivery with forceps was cause of condition. Cervix uteri torn on both sides. A cavity to the right of the uterus and about the size of a hen's egg was the channel of communication between the right ureter and the lesser uterine cavity. Below this point the ureter was occluded. Nephrectomy of the right kidney. January, 1890, recovery. Mucous membrane of kidney thick, swollen, and irregularly desquamated.

37. Weil attended case. (*Contralbl. f. Gyn.*, Leipzig, 1893, XVII, 17. Taken from Wein. Med. Woch., 1892, No. 16). Woman, aged 64. Caused by wearing a Mayer ring. The left wall of the vagina was drawn toward the fornix, and the side walls of the pelvis. In the middle a cleft 2 centimetres long, from which clear urine dripped; continuous interception of the left ureter. Uterus anteverted moderately. No operation. Patient refused operation. Use of 6 m. m. rubber tube as ureter for carrying urine to bladder; removed six days after from pain in region of left kidney. Deficiency of size and position of pessary not enough to cause fistula, probably due to dislocation of ureter and earlier cystocele.

38. Zweifel (*Nord. Med. Archiv.*, Stockholm, 1892., N. F., II., No. 22, 1-33). Woman, 29 years of age. First birth three days in duration; second, four days; third, forceps; fourth forceps and child dead. Uterus normal; cervix torn at the left. Diagnosis colon, uretero-urinary fistula. Lumbar nephrectomy on the left side, the stump bound in two parts, one containing the vessels, the other the ureter. The kidney removed, very small. January 8, 1879, good result; healing took place at the end of three months. Hysterostomatocleisis and a similar operation was previously undertaken without success.

39. Thiriar (March 15, 1892, *Western Med. Reporter*) reports the second case in a nephrectomy of a normal kidney for the cure of a

ureteral fistula, which was caused by an operation upon a large ovarian cyst adherent to the uterus and adnexa. The right ureter was attached to the cyst wall and a section sixteen centimetres long was removed. The patient made a good recovery.

40. Meyo (*Med. Record,* February 10, 1894) successfully did uretero-cystoneostomy, as suggested by Brazy of Paris.

41. Schatz of Rostook (*Sajous Annual,* Vol. 2, 1892), reported two cases in which the ureter communicated with the vagina.

42. E. Herczel (*Sajou's Annual,* Vol. 3, 1891), publishes Czerny's operative statistics of nephrectomies at the University Clinique in Heidelberg, covering twelve years. One nephrectomy was performed for uretero-vaginal fistula successfully.

43. Herrgott and Bozeman report a case each of uretero-vaginal fistula cured by operation. (*Annual Universal Med. Sciences,* 1889, Vol. 2, p. 25).

44. Paulick cured a case of uretero-vaginal fistula by a second operation. (*Arch. f. Klin. Chir.,* Vol. 33. p. 717).

45. Mackenrodt (*La Semaine Méd.,* Paris, October 24, 1894) reports a case of uretero-uterine fistula following forceps delivery in a lady 40 years of age, for which he extirpated the uterus, thus converting it into a uretero-vaginal fistula. Three weeks later the end of the ureter was united to the mucous wall of the bladder, effecting a cure.

46. Campbell (*Am. Jour. Med. Sci.,* 1880), cured a case of ureter-vaginal fistula by passing a bistoury up the ureter and slitting its anterior wall, the knife passing into the bladder. He then closed the vaginal wound with silver sutures.

In addition to the above we wish to call attention, as being of peculiar excellence, to the following three papers:

Trehaki (*Gaz. d'Hôp.,* Paris, LXV., p. 629-635).

H. A. Kelly (*Annals of Gynæcology and Pædiatrics,* Boston, 1892-3. Vol. VI., 449-460.

J. A. Pantaloni (*La Portion Pelvurine des Ureters, chez la Femme,* Paris, 1888, 427, No. 84).

The former of these three articles is on grafting or implantation of the ureters; the last two treat of the anatomy of these structures.

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EDITORIAL.

UNITY AND CO-OPERATION: WHAT THEY MEAN TO US.

In suggesting, urging and explaining to the profession, month after month, this necessary and most desirable object, we realize that we have undertaken a very large contract. How large a contract is best realized by the profession itself. But in the exigency of our present circumstances as medical men and in the glaring need of self-protection and radical change lies our hope of success. Already this JOURNAL has received substantial encouragement from many of its subscribers, who sympathize with it in its efforts, and from many of its contemporaries in medical journalism also, who have fallen into line and urge, as we do, the necessity of combination to maintain our rights and to protect and further the interests of the profession.

The first question to be asked and answered is: What is the character of this proposed unity? The second: How shall this unity be obtained? The third: In what will combination better our condition, individually and collectively?

The answer to the first question is not far to seek. It is contained in the object lesson presented to us by every combination of civilized men, except ourselves, who have certain interests in common and a common aim to be obtained. This principle of combination for mutual protection and common advantage underlies the whole scheme of society. But in what does it consist—what is its essential characteristic? It is

a willingness, as a recognized necessity, on the part of each member *to sacrifice a small portion of his apparent and immediate personal advantage for the sake of the good of all the members.* What each man gives up as an individual he gains again as a member; but, far more than this, he has a share in the accumulated contributions of all the other members as well. This, the *secret* of combination—a secret, truly, to us though all the rest of the world has discovered its value—is the very contradiction of the narrow, stupid policy which controls us as individuals now; which was that of the primordial man, if we may believe geologists, who lived by himself, fought and struggled by himself, conquered or was conquered, until at last he took a lesson from the beasts of the field and learnt the art of combination with his fellows.

At present, with us, each man hugs himself if he gain a miserable little advantage to the loss of his fellow practitioner—a patient gained, a hospital appointment secured, a puff of personal advertisement from some of the lay caterers to professional discord. In his selfishness and distrust he cares nothing that the patient may belong in equity to another, that in accepting the hospital appointment he may be expected to betray the rights of his brethren by the support of spurious charity nor that the graciously-tendered lay advertisement must be paid for out of the pockets of the profession. He virtually says: "I am all right; to hell with the rest." It is true that because he is "all right" many others are all wrong; but what of that? He stupidly forgets that, when the next man becomes "all right," he himself will be as mercilessly consigned "with the rest." It is indeed the dictum of the primordial man, with a change in verbal expression—a case of atavism at long range!

We have our medical societies; but what are these except places for the exchange only of medical facts and opinions? How seldom are our vital interests ever considered therein; and when they are, is not a spectacle always afforded to an amused public of puerile selfishness, discord and lack of organization?

If we would combine, each man must learn to *trust* his fellow practitioner and, that the latter may not take advantage of this confidence, he must be taught to realize the might of public opinion and to fear it. And this brings us to the answer to our second question: How shall this unity be obtained?

To obtain unity the initiative must come from the *medical press* and this can never be given until the press be entirely controlled by medical men themselves. Hence this is the first desideratum, the prime

necessity—the withdrawal of the medical press from the ownership and control of lay-publishing houses and its earnest support and encouragement *financially*, i. e., a preference in subscription and the prompt payment therefor, under entirely medical ownership and influence. Only thus can our press become imbued with one guiding motive—the good of the profession. Only thus can it become united itself and show the way to the profession at large. It will then be the mouth-piece and the advocate, the censor and the defender. It will be the bond between all our societies and enable these to act in concert all over the country; thus creating a public opinion whose universal power and might no self-seeking trickster nor selfish betrayer of our rights will dare to resist. There could be no scandalous hospital and dispensary abuse under such circumstances and the interests of the profession could not be sold for place and power by men in our own ranks. Our medical societies must accomplish the work of union; but they cannot accomplish this unless united and upheld and their decisions enforced by the voice of a medical press entirely under the control of medical men.

And now we begin to hear the answer to our third question: In what will this combination better our condition, individually and collectively?

With medical societies united in a common desire and intention to pursue one accepted policy—the advancement and common interests of the profession at large and with a united press, under medical control, ever ready to make known their decisions and express their wishes —with the two essential parts of popular government, the legislative and the executive, within our grasp this question almost answers itself. It needs only imagination enough to think of the things we know should be and are not; the things we realize we should have and have not; all those objects to obtain which we must daily expend energy and money, in pursuit of our profession, without to-day any adequate return. Merely to start this thought, we will mention a few of our needs. Let every man fill out the list from his own experience; it is not difficult. We have already shown what the loyal and financial support of a medical press under medical control would do for us, how it would bring back a hundred fold the few dollars cheerfully and promptly invested in subscription. So let us consider the subject of the publication of medical works under the same control.

Instead of paying the highest price obtainable, consistent with the policy of ready sales, as we now do, and instead of an author receiving the smallest possible compensation for his work, while the great bulk of

the profit from its sale goes into the pockets of lay publishers, this condition of things would be reversed. Unless our books, thus published by medical men, were sold to us at the lowest available price and unless medical authors received such compensation as would encourage them to devote their time and best energies to their work, such publishers would be merely tradesmen, not medical men, and would lose all reason for their existence. The essential difference between the two is that the medical man lives *by* the profession and the tradesman *on* it. Take our hospitals and clinics—that endless theme of outrage: does any one doubt the need of honest medical control there or that our control would soon become absolute and universal, were we united in demanding it? Finally, let us consider the druggists, wholesale and retail; have we no complaint in that quarter? Are we not forgetting how to write prescriptions and have we also forgotten that once they were a necessary and profitable part of our practice and that our patients came back to us to renew them? It is not difficult to see how our condition might be bettered if the influence of a united profession were brought to bear upon the drug trade also.

And so each man can add to the long list of needs, whose remedy lies in unity and co-operation. This combination is the one thing needful, as it is the one thing we lack.

ON HOMŒOPATHS AND ECLECTICS.

In our editorial last month we presented this subject as forcibly as possible and endeavored to paint the present intolerant and inconsistent position which the profession which is termed "regular," maintains towards its "separated brethren." We translated literally into words the attitude thus maintained, that the injustice and absurdity thereof might be brought home to all of us and that its extravagance thus shown might lead to a more intelligent and juster sentiment and, eventually, to reform.

We stated the case thus: *"Homœopaths are not only not considered physicians at all from the standpoint of the regular practitioner, but they are looked upon as fools, as knaves, as traitors and as charlatans. If they practice homœopathy honestly, i.e., separately and consistently, they are fools; if they do not stick closely and exclusively to the tenets of Hahnemann, they are knaves; they are traitors because they claim to be physicians and yet are not with us; they are charlatans because*

they profess as true that which is manifestly false and thus obtain money by appealing to the superstitious credulity of laymen."

Is not this a literal and unexaggerated statement, translated into words, of the mental and physical attitude of the bulk of the profession? And are not homœopaths themselves equally aware of this fact? How otherwise have they explained this attitude, which has never been concealed, for the past eighty years?

It was a matter of surprise, therefore, to receive several letters from homœopaths of distinction attacking us for our "bigotry and abuse." Had they stopped for consideration, it would have been evident to them that the editorial was written to and for physicians who are yclept "regular," that a home truth was being forcibly presented to these and that the prejudice upon which we animadverted was certainly not shared by us, ourselves; else the editorial had never been written. It is a very common and unfortunate fault among many men to be impressed by the meaning of particular words and, omitting all context, found false judgments thereon. Union of the entire profession is a matter of greatest moment to all; but homœopaths must not forget that, as they are in the minority and therefore in the relation of a sect, the process of union must come about by our absorbing *them* not them us. It is absurd to suppose that prejudice, such as now exists and which in the past undoubtedly had much justification, can melt silently away and give place insensibly to cordial and equal relations. The whole subject must be deliberately faced, not avoided, and we on our part must realize that the time has come for just and consistent action; the homœopaths, on the other hand, should consider the matter also from our standpoint and should meet us half way by discarding a distinctive title which at once degrades their profession to the position of a "cult" —a sect—and should accept with us the broad, true conception of the profession, which repudiates narrow titles and circumscribing definitions of itself and claims but one name—*Science*.

CORRESPONDENCE.

On Pus Statistics.

Philadelphia, Pa., April 16, 1898.

To the Editor of the American Gynæcological and Obstetrical Journal:

Sir: Concerning the general subject matter of the letter by Dr. Joseph Taber Johnson published in your April issue in answer to a former communication by Dr. J. D. Stone, the general profession has

little concern. But indirectly one point has been developed by this discussion in which we are all interested, and which needs emphasis, as it is becoming altogether a too common practice.

In his paper read before the Philadelphia Obstetrical Society, Dr. Johnson advocated the vaginal route for the treatment of bad pelvic pus cases in preference to the abdominal route. In doing this he quoted the statistics of a number of operations (amongst others those of Dr. Stone) to show that the mortality of the abdominal operation was from fifteen per cent. to twenty-five per cent., and called attention to the marked contrast in the mortality of the same class of cases operated upon by the vaginal route. To quote his present communication, "The chief point of my paper was to emphasize the fact that the mortality of the radical abdominal operation in the class of cases above referred to was so high that it ought to be abandoned in favor of the more modern vaginal incision and gauze drainage, which has scarcely any mortality at all."

Dr. Stone states emphatically that this mortality occurred early in his experience, "while I was still a novice in this difficult work."

At the time Dr. Johnson used these statistics he was aware of this fact: "I said . . . that his twenty-five per cent. of deaths occurred in his first series of cases, which included a number of large pelvic abscesses in feeble patients."

And yet Dr. Johnson knowing this used these statistics to prove that the mortality in such cases by the abdominal route "was so high that it ought to be abandoned."

What can be thought of the balance of that paper?

J. M. Baldy.

1722 Chestnut Street.

A Correction.

April 22, 1898.

To the Editor of the American Gynæcological and Obstetrical Journal:

Sir: In your Journal of March, 1898, in the discussion of Dr. C. S. Bacon's paper, my remarks were misquoted (page 356) and in consequence it has caused me some annoyance. In my remarks I gave Dr. Joseph Eastman, of Berkeley, California, credit for the first operation of the kind referred to, and gave his case as one in which the clitoris and subsequently the ovaries had been removed, without the desired effect, and later the removal of the pudic nerves, which had entirely removed

the trouble; I also referred to an article published by him at the same time in a New York journal,* I then spoke of my three cases as not having been of long enough standing or number to judge of their benefits sufficiently to base a great deal of importance to the operation as yet. Some others spoke of the same operation and of having read his article. Hence you can see the position it has placed me in, as regards my most intimate friend, Dr. Joseph Eastman, whom I assisted at his first operation of neurodectomy for masturbation—the one above referred to—and, in all justness to him as well as to myself, I ask you to make in your next issue the correction, and to give me the credit I gave him of being the original one to do this operation.

A. MILES TAYLOR, M.D.,

Professor of Gynæcology in the Post-Graduate Department, University of California, San Francisco Polyclinic.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

BERLIN STUDENTS QUIET AND HARD AT WORK—OUR CORRESPONDENT DESCRIBES A VISIT TO BAD MANHEIM — THE HETEROGENOUS CROWD AT A POPULAR GERMAN "CURE"—BUSINESS AND PLEASURE AND HOW THEY ARE COMBINED IN SYSTEMATIC HYDROPATHY—DR. SCHOTT AND HIS PERSONALITY—THE SUCCESS OF HIS SYSTEM—DESCRIPTION OF THE BATHS, THE PRESCRIBED EXERCISES AND MOVEMENTS, THE DIET AND REST —HOW IMPROVEMENT IS SCIENTIFICALLY TESTED.

BERLIN, March 20, 1898.

The Berlin medical world is pursuing the even tenor of its way and no cross current nor obstacle is to be observed in the mighty flow of its energy and work. No topic of especial interest is to the fore and so, with apologies to your readers for the diversion, I will write this month of a visit I paid last summer to Bad Manheim and describe the wonderful resources of this spring and its manifold claims to popular interest and support.

Nowhere in Europe is there a more interesting and wonderful health resort than this little town in southern Germany. The particular disease which they essay to cure at Manheim (although they

* Medical News, August 12, 1893.

do not limit themselves to one) is heart disease. All kinds of heart disease, acute and chronic, organic and functional, in youth and old age, are alike cured here—that is, as far as symptoms are concerned; of course they do not pretend to replace destroyed or shrunken valves or mend perforate foramina; but a patient knows nothing of valves and to himself he is cured, even if his physician says nay.

The methods employed to produce the results, which are actual and palpable, are what make the place interesting and wonderful. To exert these cardiac cures not a drop of medicine is used; although there is a drug store in town, its digitalis bottle is covered with dust. The medicinal measures are hygienic living, salt bathing and graduated exercise.

Everybody knows of Homburg, which has been made famous through its social gayety and the visits of royalty, more than by its cures. Manheim is quite near Homburg (twelve miles) and before long it will rise to a fame that Homburg never knew—the fame spread by cured patients.

Fifteen thousand visitors go to Manheim every summer. With its regular population of 5,000, this makes a summer colony of 20,000 souls, most of whom are cripples in various states of disablement. The town is very pleasantly situated on a southern slope of the Taunus mountains, at the foot of one isolated "berg," the Johannisberg, which is crowned by the tower of an erstwhile castle. In the town are a number of good hotels and a host of villas, which accommodate from three to thirty guests. The main street has the park on one side and a long line of stores on the other and is double lined with linden trees, forming a superb arboreal arch, leading up to the "Kurhaus" or, in French, "Casino."

This Kurhaus, although not so large, is a far prettier structures than the one at Homburg or any other watering place that I have seen. It contains all the accommodations for the amusement of the guests, including a theater and a grill room. A broad terrace is laid out in front, at one end of which is a band stand. Under a broad canopy projecting in front of the casino are hundreds of little tables and chairs and it is at these tables, sipping coffee or beer or wine, that most of the invalids pass their afternoons or evenings, listening to the band play. These invalids come from all over the world—from Russia, from India, from America and from Africa. It is an education in itself to sit and watch them as they come and go, to observe their manners and their dress. Although they all take as much pleasure as they are allowed, they do not come here for that. They are deadly in earnest,

every one, to cure the disease, which their doctors at home have probably given up.

There are not over fifteen doctors in Manheim, and of these three or four have most of the practice. By far the busiest man in the place from May 1st to November 1st is Dr. Theodore Schott. A little round fat man is Dr. Schott, but a bundle of energy. His restless activity, even when quietly conversing, reminds one of a butterfly constantly fluttering. Numbers of physicians visit Dr. Schott every summer to learn of his cures. Most of them come skeptical; all of them go away enthusiastic. And yet Dr. Schott is not garrulous, nor does he brag about his theories. He simply shows results and they talk for him.

To state more concisely the method in vogue for exerting these cures, it may be well to take a typical case and relate just what is done. I remember one case—an English lord, fifty odd years old, heavy and plethoric, short of breath, blue of face, gouty and helpless. He was wheeled around in an invalid chair, when he arrived. He could climb the Johannisberg when he left. His period of stay was four months. He had mitral and aortic insufficiency, dilatation and aortic atheroma; to say nothing of gout, dyspepsia, enlarged liver, etc., etc. This man was a patient of Dr. Schott and he arrived in Manheim the day after I did. I examined him, with Dr. Schott at his second visit. I examined him every day thereafter until I went away. I was thus enabled to note the daily improvement and observe the process of repair as it progressed.

The first thing that was done was to reduce his diet. He was denied the things that are supposed to produce dyspepsia and fermentation, and, of the things that he might eat, he was allowed to consume only half as much as he wanted. He could have no sweet wines nor liquors nor champagne, only the sour Rhine wine (Dr. Schott gets no commission on the sale of this) and he was allowed only one cigar a day.

Without allowing him a day's rest from his journey he was started in on his baths. The first one was well diluted with warm fresh water, and he remained immersed for only five minutes. The strength of the salt was gradually increased day by day, until three litres of "mutterlauge" were added to the normally high-charged salt spring. But this was four weeks later. After he had had the baths for a week he could walk a little, and then his exercises were begun. He was also required to walk certain distances every day. He began by walking five yards; he ended by walking five miles. When he fell into the full routine of his work, this gentleman's day was divided up about as

follows: He arose at eight, breakfasted on soft-boiled eggs and weak coffee, with zweiback, at 8:30; went for his bath at 9:30, which consumed an hour, returned and went to bed for an hour; then he exercised for an hour, dined at 1 P. M., rested an hour after dinner, went for a walk, and perhaps attended the afternoon concert; supped at 6.30 and retired at 9:30 or 10.

It will thus be seen that a patient's time is very thoroughly taken up in the pursuit of the cure. He has no time to think about much else; and this circumstance may be considered more intentional than accidental. It is an old trick of the profession, that when you have a nervous, hypochondriacal patient, it works wonders sometimes to keep him busy doing something therapeutically. The occupation of the mind by the business of attending to the therapeutics prevents introspection, critical analysis, worry, etc., etc.

Now after this somewhat general discription of Bad Manheim, and what is done there, a more precise description of the means of cure employed may be interesting.

The hygienic living begins when the patient leaves home. This act frees him from his daily cares and troubles and worriment, for he should leave these behind him. Then the tonic of travel and a change of scene and air begin the preparation of the soil for the sowing of the cure. From the moment of his arrival in Manheim he is kept out in the open air nearly all the time. He eats his meals even under the trees His food consists of only nourishing and easily digestible food; he is denied cigars and liquor; he is bathed and rubbed and exercised, and he retires early to sleep a full ten hours. This drastic "training" is calculated to produce the best general health possible under the circumstances and to maintain it while the cure is in progress. It is always important and desirable to have a good foundation to build upon.

There are seven springs in the vicinity of Manheim, three of which are used for bathing purposes and four for drinking. Of the three for bathing, one is seldom employed; the other two, named respectively the "Grosser Sprudel," or No. 7, and the Friederich Wilhelm's Quelle, or No. 12, being generally prescribed.

From these two springs four varieties of baths are prepared as follows:

1. A simple brine bath, made of a certain strength by the addition of fresh water and cooled or heated to the prescribed temperature. Before the water enters the bath it passes through the graduating house of a salt works, and is thus freed from its carbonic acid.

2. The thermal bath, so-called from the unaltered natural warmth of the spring, which has passed through external air and thus lost most of its carbonic acid. The escape of this acid leaves a residuum of calcium carbonate and the peroxide of iron undissolved, which gives to the water a peculiar yellowish, muddy color. The strength of this bath may be increased by the addition of quantities of mother lye or "mutterlauge," a thick brown liquid like molasses, the uncrystallizable refuse after the manufacture of table salt by boiling and evaporating the concentrated brine at the salt works. Mutterlauge is very rich in the chlorides of sodium, calcium and bromine, and it adds greatly to the medicinal properties of the baths.

3. The Sprudel Bath—"Sprudel" in German is geyser in English. The water for this bath comes directly through air-tight tubes, from the heart of the spring to the tub, and thus contains the full quantity of carbonic acid, with all the salts in perfect solution. This water is clear as Vichy and effervesces like that water when siphoned out.

4. The Strom Sprudel.—The same water as the foregoing, but instead of retaining a tub-full, the stop-cock and the drain hole are left open so that there is a constant flow of the water in and out, thus maintaining a high charge of carbonic acid.

The baths are usually given in the order here notated, beginning with the Soolbad and ending with the Strom Sprudel. The changes from day to day are very gradual, so that by the time the patient reaches the Strom Sprudel he is in comparatively vigorous condition. He well needs to be, for the Strom Sprudel baths are powerfully stimulating—even a healthy young person cannot take one without bad effect, unless he has been graduated up to it by having taken a course of the other baths. Tersely speaking, the effects of the baths are to diminish the frequency and increase the force of the pulse beat; identically the same effect as of digitalis. This will seem incredible to many, who, perhaps, swear by digitalis. That salt and water acting on the skin will produce the same effect as a drug in the stomach is apparently preposterous. I, myself, was skeptical when I first reached Manheim, but after a few examinations I was soon convinced.

Dr. Schott explains this action of his baths as follows: The mineral and gaseous constituents of the water act on the skin as a counter irritation, drawing the blood to the surface and thus relieving the over-burdened heart. Further than this the nerve endings in the superficial layer of the corium are profoundly stimulated, and they transmit this excitation to the nerve center, which in turn reflects it to the vaso-motor system and to the ganglia controlling the action of the

heart. Such an explanation is not only plausible; it is probably correct.

The immediate effect of the first few baths is to produce a sense of oppression in the præcordi-um, which makes the patient breathe more slowly and deeply for a few minutes, the usual respiration being gradually resumed. A sense of warmth is experienced in the extremities and over the body surface generally. After emergence from the Sprudel baths, the body is red as a boiled lobster. Always, after all baths, the patient is enjoined to rest in the recumbent position for an hour or more. Then the patient is ready for his "Widerstandsgymnastik."

The Schott exercises have probably as much to do with the effect of the cure as the bathing. The two go hand in hand.

The term "Widerstandsgymnastik" is the ponderous German for "resisted movement." By this is meant that the patient moves his arms, legs and body and these movements are resisted by another person, who is called the attendant or operator. The set of exercises includes all the movements of flexion, extension, abduction, adduction and rotation of all the voluntary muscles of the body. The attendant opposes these movements with his hands, exerting a slightly inferior force to that exerted by the patient. He never grasps the wrists nor ankles, nor in any other way constricts any part of the body. Besides opposing the movements, he watches the respiration, the color of the face, etc., to guard against undue strain on the heart or lungs. The patient must breathe slowly and regularly and not hold the breath while executing a movement. There should be no trembling of the muscles; if this occurs, too much opposition is maintained and the pressure should be lightened. Each movement is made slowly and evenly and a few minutes' rest is imposed between them.

I ought to insert a word of warning as to the use of an operator. Any body, having some strength, will *not* do as an operator. There must be present, besides strength, a lot of intelligence, quickness, and a development of reciprocal sensation, which last, perhaps, is largely augmented by training and practice. A poor operator might make a patient very much worse in one gymnastik séance—undoing the work of weeks of bathing.

I saw some Roentgen ray photographs, which Dr. Schott has had taken to corroborate and prove his theories. To prove that the heart can be temporarily dilated by over-exertion, he took an X-ray photograph of a normal boy's heart at rest. Then he put him

to wrestling violently for twenty minutes and took another photograph of the heart.

He found a young man who could ride a wheel, but who had not ridden one in a long time, and started him on a ten-mile ride at a quick pace. The result on his heart, as proved by the X-ray, is markedly shown.

Then to show the effect of his gymnastiks, he took a photograph of the dilated heart of an 8½ year-old boy, before and after fifteen minutes of Schott exercises, and the difference is clearly demonstrated.

He took the dilated heart of a 14-year-old girl, then put her through a Sprudel bath for ten minutes and took her heart again, with also a marked result.

VICTOR NEESEN.

REVIEW.

The Year-Book of Treatment for 1898. A Critical Review of Practitioners of Medicine and Surgery. Lea Brothers & Co., Philadelphia and New York.

The object of the volume before us, the fourteenth annual issue, is to present the busy (?) practitioner with a digest of the progress made in therapeutics during the past year. As all of the contributors are British, it is interesting to note their reviews from this standpoint. From the opinions expressed the English practitioners appear much more conservative than their American brethren. The Year-Book of Treatment is not nearly as elaborate nor exhaustive as the American Year-Book of Medicine and Surgery, yet it is an extremely interesting and useful volume. Nothing very novel has occurred during the past year in the realm of gynæcology. Some progress has been made in the bacteriology of the female genitals and considerable attention given to the treatment of retro-displacement of the uterus. The volume is, as it was intended to be, a ready reference and a valuable addition to a library.

X. Y. Z.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Stated Meeting, March 25, 1898.

The *President,* HENRY P. NEWMAN, M.D., in the Chair.

Hydrocephalus of Fœtus.

Dr. C. S. BACON: I have here a specimen of a case of hydrocephalus which is not in as good a condition as I could wish, as it has been somewhat injured in its delivery, and also it was not put immediately into a preserving fluid after its removal. On account of the rarity of the condition it seems worth while to exhibit it. Sickel has collected statistics of 65,000 births, and he finds the frequency of hydrocephalus to be 1 in about 6,000. La Chapelle, in over 50,000 labors, found the frequency of hydrocephalus to be 1 in 3,000, while Winckel found the frequency of this condition to be 1 in 2,000. Some recent statistics from the Berlin Clinic show the frequency to be 1 in 800 or 900. These figures are too large, because a great deal of the material there was pathological. The figures are sufficient to show that the condition is a comparatively rare one. Hydrocephalus of the fœtus is also interesting, because of the danger that attaches to it. In the cases that are collected in Mueller's Handbook the number of deaths following delivery is about twenty-five per cent., and of these about one-half or thirteen per cent. of the deaths are due to rupture of the uterus. This great mortality is due to the fact that the condition is not generally diagnosed at the proper time. Proper treatment, consisting of puncture of the sac of the head, would enable the child to be born without any special danger.

In these cases we generally have a head presentation, but sometimes a breech presentation. In a breech presentation the strain on the uterus is less as soon as the breech and body are born, and the danger of rupture of the organ is correspondingly less.

The case occurred four days ago. I show you simply the head, because the body which was entirely normal in every way, has been removed. It was estimated that the head sac contained about one pint of fluid, and it measured after delivery and after the fluid contents had been evacuated, in the occipito-mental circumference, 51 centimeters,

before evacuation probably 53 to 54 centimeters, instead of 37 to 40 centimeters, the average occipito-mental circumference. The general shape of the head as moulded by the uterine contractions is illustrated by the specimen. The patient was a primipara, in the thirty-eighth week of gestation, as nearly as could be ascertained. Twenty hours after labor began the membranes ruptured while the cervix was dilated only to admit one or two fingers. The dilatation of the cervix did not proceed rapidly afterwards and at the end of sixty hours, when I was first called, it had only dilated so that four or five fingers could be admitted. As is usual in these cases, a correct diagnosis of position had not been made, but it was supposed that it was a breech presentation. The large mass in the lower part of the abdomen was taken for the breech. The head could not be distinguished accurately in the fundus of the uterus, but failure to make out the head was attributed to tetanic contraction of the uterus. Forty hours after the membranes ruptured, *i. e.*, sixty hours after the beginning of labor, I saw the patient, and found the uterus very much distended in its lower segment, and in a state of tetanic contraction. By vaginal examination the distended head felt like a much distended bag of water, and if one had not been certain that the membranes had already ruptured one might have mistaken the condition, as has been done in so many cases. The patient was anæsthetized, the head punctured, a cranioclast applied and the head extracted. Following the extraction of the head the contents of the uterus behind the child, which had become putrid, were expelled. When I first saw the woman she had a temperature of 101°, which indicated immediate delivery. After expulsion of the child the placenta was expelled by the Credé and a slight tear in the vagina sewed up. The patient is now in normal condition. The case is one that probably would have terminated spontaneously, judging from the success of the uterus in shaping the hydrocephalic head to the pelvic cavity, if the uterus had been strong enough to expel the child and if rupture of the uterus had not occurred before. Perforation and extraction of the child were indicated without a doubt in this case on account of the fever and would have been called for anyway on account of the danger to the mother. I should have said that no heart sounds were to be heard when I first saw the patient. They were heard distinctly a few hours before.

Discussion.

Dr. Newman: I would like to ask Dr. Bacon in regard to the perforation, whether it is not lateral to the fontanelles and parietal bone?

Dr. BACON: The perforation is in the region of the posterior fontanelle.

Dr. PETERSON: Did you wash out the uterus after delivery on account of the putrid condition?

Dr. BACON: Yes, I did, with sterilized water.

Formol Catgut in hermetically Sealed Glass Tubes.

Dr. REUBEN PETERSON: I would like to show the members of the society an arrangement for catgut prepared according to my directions by Mr. B. K. Hollister of this city. The idea of placing sterile catgut in sterile tubing and then hermetically sealing the tube is not original with me, as it has been in use for some years. On account, however, of the difficulty of sealing the tube when the gut is kept in alcohol the work must be done by professionals. I have had occasion to use the catgut prepared by Mr. Hollister for some months, and always with the most satisfactory results, and I do not hesitate to recommend it as safe to the members of the society.

My experience with catgut I presume is similar to that of most operators. When I began my abdominal work I feared to use catgut on account of the difficulty in rendering it absolutely sterile, as compared with silk. But after I had had occasion to remove the latter material from a number of sinuses which resulted from its becoming infected, I became convinced that an absorbable material should be used. With this end in view I tried sterilizing the catgut by boiling it in alcohol under pressure. While this method was satisfactory in most cases, once in a while I encountered an infection which I was sure was due to the catgut. I then prepared the gut in cumol, which boils at a very high temperature and does, I think, absolutely sterilize the catgut. But the cumol process is a difficult one, and the catgut is apt to be softened. I have found the formol catgut exceedingly satisfactory. The method of preparation is comparatively easy and the integrity of the gut is preserved.

Any receptacle containing more than one ligature is faulty from the danger of contaminating the ligatures which are not used. To obviate this difficulty I have had these tubes prepared each containing one hundred inches of formol catgut. The beauty of the formol gut lies in the fact that it is sterilized by boiling water, the best known agent for sterilization. The outside of the tubes can be sterilized by boiling five minutes just prior to the operation. The tube can then be easily broken by means of the file mark, and the sterile gut handed to the operator.

Besides the regular formol catgut I have been trying pyoktanin gut. This is prepared by boiling the catgut in a 1-1000 solution of pyoktanin and water for twenty minutes. It is then dehydrated in a 1-1000 alcoholic solution of pyoktanin and then stored in juniper oil. It cannot be preserved in alcohol because of the dissolving out of the pyoktanin by alcohol. With juniper oil and pyoktanin the strands of catgut are a little more resistant and better for pedicle work, although I do not consider pyoktanin a very valuable antiseptic. The great difficulty in the proper preparation of catgut is that the majority of operators have to entrust it to a hospital nurse, and as the surgical nurses are changed every two or three months, faulty technique is apt to creep in.

DISCUSSION.

Dr. ALEX. H. FERGUSON: As soon as catgut was presented to me in sealed-up tubes, as advised by Dr. Peterson, it so recommended itself to me as being surgically ideal that I at once ordered a large supply to be put up in this manner. Bad results from catgut are sometimes blamed to the catgut, when the catgut itself is not at fault. The fault may be with the nurse, the receptacle, possibly with the assistant, or sometimes with the surgeon himself. When catgut is put up in this manner we know that the sealed receptacle is aseptic. I doubt very much that benefit is derived from the pyoktanin or the small amount of iodoform that gets into the catgut to render it antiseptic. It appears to me that we must get back to some form of catgut which is harder to become absorbed than the pyoktanin or the formaldine catgut. The great difficulty in general surgery with a form of catgut that is aseptic or feebly antiseptic with some agents is that it becomes absorbed too soon. The stoutest aseptic catgut will become absorbed in ten or twelve days, or soften and become a culture medium for germs. I have performed a number of experiments with it to determine the length of the time that catgut would become absorbed, and I wish to say that the aseptic catgut becomes absorbed more rapidly than antiseptic catgut which is hardened with pyoktanin. The catgut that will remain the longest of all in the tissues is chromicized catgut. I have been using catgut which is prepared for me by Mr. Hollister with formaldehyde gas and boiled. The bacteriological test to which it is then subjected proves it to be aseptic. It is then chromicized. Chromic acid itself is a fairly good antiseptic agent, and will permeate every particle of the catgut. Very stout chromicized catgut will remain in the tissues six weeks. No. 3 or 4 catgut will remain about three

weeks; therefore we can use Nos. 3 and 4 instead of Nos. 6 and 8 catgut, which is a great advantage. We can use it double, depending, of course, upon the part of the body where it is put. Almost every part of the body differs with regard to the time that catgut will become absorbed, and very stout chromicized catgut should not be used because it takes too long to become absorbed.

I must compliment Dr. Peterson on this additional advance step in our surgical procedures. I think it is valuable.

Uretero-Vaginal and Uretero-Abdominal Fistulæ.

BY ALEX. H. FERGUSON, M.D.

(See Page 629.)

DISCUSSION.

Dr. C. S. BACON: I have not had any experience with these cases, consequently I have nothing of interest to add. But I wish to ask a question. No mention was made of an attempt to find the bladder portion of the ureter in either of these cases, and I wondered if such an attempt had been made by making a preliminary catheterization, whether it would have been possible to unite the ends of the ureters. I remember having seen an operation of this kind once made by Professor August Martin, of Berlin, in a case similar to the one first reported by Dr. Ferguson. I simply rise to ask why an end-to-end anastomosis was not possible in the cases reported to-night.

Dr. REUBEN PETERSON: The paper we have listened to is certainly a masterly one, and ought to give us considerable hope if we are unfortunate enough to meet with these cases in our practice. It seems to me the lesson to be learned from the report of these cases is that one should not in this day think of removing the kidney where the ureter is accidentally cut in an abdominal operation. This has been done more than once, the operator fearing to make an end-to-end anastomosis or place the cut end of the ureter in the vagina or abdominal wall. It would seem to me that in case of the accidental section of the ureter in the removal of a tumor it would be the part of discretion in the wise operator, unless he has had practice in end-to-end anastomosis of the ureter in animals to make an uretero-abdominal or uretero-vaginal fistula with the idea of later by a plastic operation connecting the ureter with the bladder.

I have seen recently a little experimental work on transplantation of the ureters into the rectum, and to my mind it is very delicate work, and one where the average operator would fail, unless he had done a good deal of experimental work on the lower animals. Our patients would be better off to place the ureter in the abdominal wall, and do a plastic operation later.

Another point that suggested itself to me when the doctor reported his cases was why he used catgut in the bladder. In both cases he got some escape of urine after his operations, the wounds eventually healing. It occurred to me that this might be due to the catgut. Marion Sims was enabled to cure vesico-vaginal fistulæ principally on account of his choice of silver wire as a suture material, because it was not easily infected. It would seem to me impossible for catgut to remain aseptic within the bladder. Undoubtedly, silk would be better material to use in this connection; but possibly the doctor had reasons for the use of catgut, and if so, I would like to hear them.

Dr. HENRY P. NEWMAN: I would like to ask Dr. Ferguson whether in the case of uretero-abdominal fistulæ he preserved the provisional cavity at the end of the incised ureter. I understood that after making his incision in the bladder, he used a part of this in connection with the continuous ureter. If he did this, would it stand the test of time and be a reliable channel for urine? It was evidently provisional tissue that had formed around the urinary tract, and usually it will contract, and finally close up.

Dr. FERGUSON (closing the discussion): With regard to Dr. Bacon's question, I did not attempt in my first case to unite the proximal and distal portions of the cut ureter for the simple reason that the history of the case pointed to the ureter coming away as a slough. The abscess was lanced, its cavity washed out, and then packed with gauze, and a slough came away. I judged from that it would be utterly impossible to find any portion of a normal ureter short of the brim of the pelvis, and it would be a hopeless task to commence where a large abscess had been to search for the proximal end, so I did not try to hunt for it. I passed a probe into the bladder end, and it only went in about one-quarter of an inch. Inasmuch as I did not try to get the other end at all I did not consider it of sufficient importance to mention it in the paper.

With regard to the second case, I knew the ureter was not injured at the time of operation, because on the same side where the fistula formed, in dissecting out the thin walled cyst I exposed the ureter and could see that it was not injured. When called to see the case

twelve hours after operation I very likely sutured the ureter and injured it in controlling hæmorrhage. I did not attempt to find the proximal portion of the ureter in this case for several reasons. There was a large mass of cicatricial tissue and a cavity in it which contained an ounce of urine. From the pelvis there had been removed an adherent cyst, and a great deal of cicatricial tissue had formed all along the side of the pelvis and to dissect it out would likely endanger the life of the ureter. I thought it would be better surgery simply to expose the parts down to this mass of tissue, then cut a hole in the bladder, lift it over and sew it there.

With reference to Dr. Peterson's question why I used catgut: If I used silk I would have to cut it short, and it could not be removed, and later the knot would find its way into the bladder and might serve as a nucleus for calculus. I used catgut because it would come away itself in about a week.

In the literature of this subject it is noticeable that when there has been a uretero-vaginal fistula and by operation converted into a vesico-vaginal fistula, it either closed itself or was easily closed. The aim should be to do such an operation that if you do not cure the fistula you can convert it into the other variety, the urine escaping from the bladder into the vagina instead of from the ureter into the vagina, after which further treatment is easier.

Some Observations on the Treatment of Ante-Mature Labors, Especially in Abortions.

By F. E. Stahl, M.D.

(See page 602.)

Discussion.

Dr. C. S. Bacon: This paper presents to us the question of the management of incomplete or inevitable abortion. Threatened abortion is not considered, hence it is not necessary for us to discuss its management. I will only call attention to the fact that inevitable abortion means incomplete abortion, because we cannot determine by the degree of dilatation of the cervix, nor by the amount of hæmorrhage when the abortion is inevitable. Only when the fluid or the fœtus or a part of the membranes have passed away; *i. e.*, in case of an incomplete abortion is it inevitable.

The dangers of abortion are chiefly two, sepsis and hæmorrhage. The author called attention to the management of sepsis in his introductory remarks, and perhaps there is no reason for criticising or considering the position that he took because he made no absolute condemnation of hysterectomy. I did not understand the author to claim that hysterectomy was never justifiable in a case of sepsis in abortion, but that it was perhaps performed when unnecessary. I agree with him if he claims that the indications for hysterectomy in sepsis, both in cases of abortion and after labor at term, must be extremely strict, and I believe there is a tendency at the present time to regard the indications too lightly and remove the uterus when the indications are not sufficient to warrant it.

To classify the operations for the management of incomplete abortion, they may be considered under three heads. First, there is the method recently recommended and advocated so strongly by Dührssen, namely, packing the interior of the uterus with iodoform gauze, thus producing strong uterine contractions and expulsion of the entire contents of the uterus, including the remaining portions of the egg. This method is advocated by a great many obstetricians at the present time. Second, removal of the remaining portions of the egg by means of a curette. Third, removal of the egg by means of the finger. I omit mention of the vaginal tamponade, which is often necessary in cases of threatened abortion, or where the diagnosis between threatened and inevitable abortion cannot be made. If I rightly understood the essayist he advocates the use of the finger in the majority of cases. The advantages of the finger are (1) the greater certainty of diagnosis of the exact condition, and (2) the more complete removal of secundines. I want to call attention to the advantages of the curette, and the dangers of the finger. The use of the finger requires a larger dilatation of the cervix than the curette. There is no one, I suppose, who will question that the examination by the finger and its use in removing the secundines is allowable and may be desirable if the cervix is open. It is different where the cervix is not dilated. If the cervix is to be opened by a rapid dilatation as by the Hegar or Ellinger dilators there is great danger of tearing it and of producing a good deal of injury in that way. Sometimes rupture may take place. So I believe the author is correct in objecting to rapid dilatation in order to introduce the finger.

There is, however, much danger from dilatation by the laminaria tent. Where a tent is used for diagnostic purposes in gynæcological cases, as, for instance, in cases of hæmorrhage, the danger is not as great as it is in cases of abortion, because there is much more fre-

quently infection in cases of abortion, which are so often caused by the introduction of sounds into the uterus without any attempt at cleanliness. Often the infection has already resulted in toxæmia, manifested by fever, and then the use of a laminaria tent is certainly attended with a good deal of danger.

Besides the objection to the use of the finger arising from the necessity of dilating the cervix, another objection is the danger of infection from the finger itself. We are becoming more and more aware of the impossibility of entirely disinfecting the finger, and the best surgeons now make it a practice to operate in places, where there is a good deal of wound surface produced, with gloves. When such men as Küstner and Mikulicz, and others, from the results of their vast experience, adopt this precaution we can easily see the importance of remembering the fact that the finger cannot be thoroughly sterilized. In the operation of myomectomy, where considerable manipulation with the finger must be made in tissues easily infected we have exposed a large surface for the growth of bacteria. If we attempt to clean off the interior of the uterus with a finger which is not perfectly sterile we are in quite as great danger of producing infection. I believe that the general use of the finger by practitioners in these cases is fraught with serious danger. We know that a practitioner who is not trained in surgery has confused ideas about absolute sterilization of the fingers, and we know a great deal of infection may result from this confusion of ideas and imperfect technic.

These are the two dangers of this method of cleaning out the uterus, the danger of dilating the cervix with a tent, and the danger of infection from the finger. How does the other method of cleaning out the contents of the uterus with the curette, stand in regard to these two objections? The curette can be used without dilatation of the cervix. There is generally sufficient dilatation to enable one to use the curette at once in cases of inevitable abortion. The uterus can be cleaned out immediately and not wait twelve hours, which is an important consideration when there is any infection or considerable elevation of temperature. The curette can be made absolutely clean, and there is no danger of infection from its use. The objections to the curette are (1) the danger of perforating the uterus, recognizing the fact that the post-abortum uterus has lax walls; (2) the danger of leaving some of the secundines to cause hæmorrhage or subinvolution. As to the first objection, it is much exaggerated. With the proper kind of curette there is no special danger of perforation. Perforation occurs not so infrequently when the curette is used in the non-pregnant uterus, for the treatment of a

variety of pathological conditions, but therefore we do not give up the valuable practice of curettage. One must only be aware of the danger and on his guard. As to the second objection, that of leaving secundines behind, while it is true that portions of the membranes have been left, and perhaps at times the entire egg, this is due to lack of care, and can be avoided by sufficient attention and skill. I cannot agree, therefore, with the essayist and others that the method of removal of an incomplete abortion by the finger is the best.

Dr. REUBEN PETERSON: I have made a number of notes with a view of discussing the various points brought out in the paper, but Dr. Bacon has covered practically the same ground that I should have gone over. I should dislike, however, to let the opportunity go by without adding my mite, however small it may be, against certain things that the essayist advocates in his paper which I consider dangerous in the extreme. I thought the time had gone by for the use of laminaria tents in gynæcology, yet I understand their use is advocated in obstetrics. It would seem to me that we could not adopt a more dangerous method for dilating the cervix, whether puerperal or non-puerperal, than the introduction of a laminaria tent. The doctor in speaking of this method of dilatation said that one of the dangers is sepsis. If there be any method of treatment of inevitable abortion which is fraught with this danger he should discard it if there be any possible way of adopting any other treatment. This one admission in itself is enough to do away with tents entirely. If Dr. Stahl has been successful in the treatment of these cases with laminaria and other tents, it speaks well for his asepticism, and he is to be congratulated. In the hands of the general practitioner I not only think cases of mild sepsis will be produced by their use, but I think some of them will prove fatal, because, as Dr. Bacon has said, a general practitioner unaccustomed to rendering the hands surgically clean is also unable to render laminaria tents clean. This fact, together with the nature of the tent itself, and the danger attending is use, should condemn them, and especially as a routine practice.

In my own practice in the treatment of inevitable abortion I began with the so-called conservative methods. I packed the vagina and waited, and in many cases the secundines came away and there was no trouble. I often had hæmorrhages if the case were prolonged, and the uncertainty as to the time when the uterus would be emptied was annoying to both patient and operator. I abandoned this practice, and adopted the method of treating every abortion as an abnormal condition of the uterus. Personally, I do not allow there is any such thing

as a normal condition in abortion. Such patients are fit subjects for surgical operations, and whenever I have a case of inevitable abortion I treat it as a surgical case. I do not ask a woman whether she will take chloroform or not; I tell her it is necessary. I place the patient under chloroform, render the vagina aseptic, sterilize my instruments, and use as much care as if I were going to do an hysterectomy. I proceed to clean out the uterus, using a steel-handled dilator, and a blunt or sharp curette as the case may be, depending upon the stage of the abortion. I think that it is the exceptional case when I do not completely empty the uterus. If small portions of the secundines remain, my operation being aseptic, they come away without any subsequent sepsis. After the patient comes out of the chloroform, I have no further anxiety over the case, provided there has been no sepsis to begin with. If there has been any sepsis, a hysterectomy, under certain conditions, is justifiable and demanded. I am perfectly convinced that there is a field for this operation in certain cases of abortion, but the time is too short to enter fully into this question. Since I have adopted the universal method of treating inevitable abortions in this manner, I have had no trouble, and my patients get well without elevation of temperature.

I can only reiterate what Dr. Bacon has said in regard to the use of the finger, as a uterine curette. It is unsurgical. There is nothing so difficult to render surgically clean as the subungual space. With all due respect to the essayist and the views he has advocated, I would place the finger along with the laminaria tent, and discard them both.

Dr. SAMUEL L. WEBER: I think Dr. Bacon and Dr. Peterson have been a little too severe on the use of the finger. I agree with them fully, that in the majority of cases we can get along with the curette alone, particularly in inevitable abortions that are early, before the second month, when the egg itself is small. There are many cases of abortion in which it is absolutely necessary, if the obstetrician wishes to do a perfect job, to use the finger. The curette should be used in every case where possible, but when we have a large mass in the uterine cavity, it seems to me we should use the finger, especially if the cervix is fully dilated. The previous speakers object to the use of the finger for the reason that it is almost impossible to make it surgically aseptic, which is true; but still we must remember that even if the finger is not absolutely aseptic, we can directly we are through with the work, remove what little danger the finger might have introduced in the uterus, in the way of germs, by a prolonged uterine douche. The mechanical effect of water, say, running about two quarts of water

through such a uterus, would be sufficient to remove mechanically the few germs that might have been introduced into the uterus by the finger. These germs are still on the surface and water will remove them. I have not had any trouble in those cases in which I have used the finger. I recall no case in which I have had elevation of temperature following manipulations of the finger, provided a sufficient amount of water was used to irrigate the uterus afterwards.

The subject of the treatment of inevitable abortion has been gone over so many times that I think it is pretty well understood. And yet I think every one here will agree with me that in consultation we see the most wretched blunders made by general practitioners in the treatment of cases of inevitable abortion. Some general practitioners have no knowledge at all of asepsis. They resort to a so-called conservative routine measure, which is simply to give ergot or hydrastis and wait. The result is the development of sepsis in a large percentage of cases. After recovery the uterus remains sub-involuted for a long time, if the woman is fortunate enough to have escaped a permanent tubal disease. A second mistake they make, when they do it alone or in consultation with each other, is that in the majority of cases they attempt to curette without chloroform. A curettement for incomplete abortion can no more be thoroughly done without having the woman under the influence of chloroform than a curettement for endometritis.

Dr. ALEX. H. FERGUSON: There are one or two questions I would like to ask the essayist. If there is anything I am a crank on it is asepsis and antisepsis. We may do Dr. Stahl injustice if we do not find out what his methods of asepsis and antisepsis are, and how he proceeds in cases of inevitable abortion, where the cervix is apparently clean, and it has not been tampered with. I make a distinction between those cases of abortion that have and those that have not been caused mechanically. Those cases in which a sound has been passed either by the patient or a physician are usually septic from the start, as pointed out by Dr. Bacon. I would also like to ask Dr. Stahl how he deals with the septic uterus, and how he disinfects his laminaria tents. The doctor may be able to defend his method of procedure to some degree at least in these cases.

Dr. HENRY P. NEWMAN: I am personally very much interested in this subject, as not long since I presented a paper on it before the American Medical Association and was vigorously sat down upon by a number of the rural delegates. I presented my method of dealing with these cases, believing that it was the adopted method of my confrères, but I found it was not.

What I have to say on this subject has been very well said by Drs. Peterson and Bacon, hence my remarks will be very brief. I fail to reconcile some of the terms used to-night, particularly as Dr. Peterson refers to normal abortions. I regard abortion as a pathological condition from the first. It cannot be otherwise. I noticed, too, a liberal use of the term radical. If conservation of life or of the health of the patient is radical, then I am radical, and I believe it is accomplished by dealing promptly with these cases. I refer particularly to cases up to the third month, where in the majority of cases the decidua remains and interferes with involution of the uterus, the uterus remaining hard, heavy and ultimately we have a gynæcological case. I say ultimately because in almost every case some damage is done to the uterus and to the woman. This is the source of many displacements, chronic lesions of the uterus and its adnexa, and I cannot let the opportunity pass without cautioning all those who are engaged in the practice of obstetrics and in general work not to trust to nature in this class of cases. It is not good obstetrics or good surgery to regard all of these cases as gynæcological, and my manner of dealing with them is similar to that mentioned by Dr. Peterson. I make an important procedure of it, believe that it should be done deliberately and under strict antiseptic precautions the same as we do a hysterectomy, and every little detail should be carried out with the same exactness. Dilatation of the cervix at the beginning of the operation should be done with great care, and if done with proper precautions no injury need occur. A strong dilator is a safe instrument, if properly used. It should be used with the kneading process (not by the forcible use of a thumbscrew and stretching the tissues all at once), the same as we would dilate the rectum. Dilatation of a physiological character can be effected in a puerperal uterus, or one that has been impregnated. The parts are softened physiologically, and the dilatation is a comparatively simple process, and should never be followed by tears or mutilation, if properly done. It should be done always under an anæsthetic. After the woman is thoroughly anæsthetized, the cavity of the uterus should be inspected. I believe this can be done with the curette if one is accustomed to handling this instrument. He can use the finger with the curette as accurately as he can with the finger itself. After thorough inspection and cleaning out of the uterine cavity, I resort to the use of strong application of carbolic acid and iodine, so that if shreds are left they will be destroyed by the cauterizing effect of this acid. The uterus is then packed with iodoform gauze, or, preferably, iodoform wicking, leaving the lower section of the uterus rather loosely packed, with a single strand or so extend-

ing through the cervix, inasmuch as we desire drainage and the stimulating effect of the tampon in the uterine cavity. With the usual dressing for the vulva, I leave my patient and have no more concern about her. If it is a hospital case the patient is visited once or twice. If no tampering with the case occurs the woman gets well, provided there was no sepsis there already. If there is, treatment should be opportune and carried out in the manner I have referred to. If we have a case of general sepsis to deal with, with extension to the uterus, a more thorough procedure should be considered, even extirpation of the uterus.

Dr. Stahl has done a large amount of work along this line and his results have been favorable, and I highly commend it. He has dealt with an important subject and one that we can all learn a lesson from.

Dr. STAHL (closing the discussion): I feel very much pleased at the turn the discussion has taken. A great many points have been raised in connection with my paper that are quite clearly answered in it, particularly those parts that I did not read for want of time.

Dr. Ferguson asks a question in regard to my method of asepsis, and how I treat my cases. I proceed in a case of obstetrics as he would in a case of surgery; we would endeavor to bring about an ideally aseptic condition. In obstetrics, like in surgery, the routine case is treated with the routine method of asepsis or antisepsis. There are certain cases in obstetrics, like in surgery, where emergency compels a somewhat routine practice, but only in so far as the special danger of the emergency demands; when that is successfully met the treatment is continued as in the usual manner.

In Case III. emergency dictated my course. I was at dinner and did not know the nature of the case, but replied immediately. Recognizing the emergency, I did as I have done in many similar cases of emergency under like circumstances; I washed my hands carefully, but rapidly, with warm water and soap (potash) usually at hand, and immediately went in and emptied the uterus without further considerations. I have never had a case with an unfavorable sequela, nor have I ever been compelled to curette a second time for retained secundines. The occasion may come, but as yet I am free of such repetition. In emergency cases of impaction of after-coming head, turnings of oblique positions, where moments mean life, I have always and still act as emergency demands, with an asepsis of warm water and soap, which is often all the exigencies of the emergency will permit. I know that conservation of life and physiological resistance are of greater moment than the elaboration of a technique which aims to, but does

not, destroy the last microbe, and which exposes maternal and fœtal life to greater danger than is possible from that last microbe.

As regards the term, normal coursed abortion, used in my paper, I fear the gentlemen did not catch the adjective. This is a correct term, paradoxical though it may seem. If dilatation and expulsion occur without pathologic manifestations, in abortion like in mature labor, the course is normal, though the time of the labor is abnormal; therefore abortions are abnormal, but the course of an abortion may be normal or abnormal.

The objections to the use of the finger seem to me to spring from theoretical rather than from practical sources. Why should not the same gentlemen advance the same argument in a forceps, a version or a manual extraction of the placenta where, surely a part, or the whole hand or forearm must be inserted. In gynæcology, even if the case be a bad pyometra or pyosalpinx, does that preclude the use of the finger or fingers in whatever manner necessary? Is there not here also a question of skill as well as one of bacteriology? Ahlfeld (Deut. Med. Woch., No. 13, 1896, p. 194), has proven through a series of bedside examinations in the lying-in-room that the finger may be sterilized approximately in ninety per cent. of cases, yet not perfectly bacteriologically made free. Even so, he adds, notwithstanding that the introduction of germs seemed here almost impossible, his morbidity (for that period) *shows not a hairbreadth's improvement*. Yet, in cases of necessity Ahlfeld would not hesitate to introduce his hand into the uterus. I but carry my conclusion to this degree, that in abortions, where preference is possible, like in mature labor, retention can best be overcome with the finger or fingers. There can be no doubt that the gentlemen have been ultra-enthusiastic in portraying the dangers of the introduction of the finger into the uterus under abortion circumstances. The advantages of the finger over the instrument are many, as mentioned there is less traumatism, less danger of secondary curettage or retention, perforations, and, for differential diagnosis, as in deflexions of the uterine cavity with retention, or abnormalities in anatomical development or pathological growths, the finger alone can be depended upon.

As regards the use of tents it was but a month ago that Dr. Montgomery, of Philadelphia, before this society, spoke of his use of tents in his gynæcological work. He maintained that he had never encountered a case (his own) of sepsis from their use. Lusk, Mundé, and many others, favor their use. Not only do tents dilate but they assist in checking hæmorrhage and favor expulsion en masse. Looking back

I find Schultze (Centralbl. f. Gynek., 1878, Bd. II., p. 150), writes that in chronic metritis and parametritis laminaria tents have a very favorable influence, ascribing it to the uterine contractions. He maintains that with a strict antisepsis unfavorable results can be avoided. Looking over the unfavorable reports with tents, I incline to the belief that the operators, not the tents, have been at fault. My remarks and experience apply only to the laminaria tent.

Official Transactions.

C. S. BACON, *Editor of Society.*

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, March 8, 1898.

The President, W. GILL WYLIE, M.D., in the Chair.

Procidentia Uteri.

Dr. A. B. TUCKER: I have here this evening a case of procidentia uteri, which I would like the members to see. The patient is 48 years of age. Six weeks ago she took a sitz bath of very hot water and watercress, which resulted in gangrene and sloughing of the mucous membrane, covering the cervix and extending up to the vaginal junction. Prior to taking the sitz bath there was no erosion present. Treatment has consisted in endeavoring to keep the uterus up and in applications of ichthyol. I would be glad of any suggestions.

DISCUSSION.

Dr. J. RIDDLE GOFFE: I have nothing to suggest in the way of treatment. That which Dr. Tucker has instituted seems to meet the indications. Perhaps the application of oxide of zinc, in order to exclude the air from the parts, would be grateful to the patient.

Dr. CLEMENT CLEVELAND: I am opposed to hysterectomy for procidentia and never employ it in such cases. I prefer the Le Fort operation. If the woman is married, I do a modified Le Fort operation, leaving a little space on the side. If she is a widow or a woman well advanced in years, I do the Le Fort operation, using as suture kangaroo tendon or chromicized catgut and close the perinæum with silkworm gut. I do not remove the cervix. We have employed the Le Fort operation with good results at the Woman's Hospital in many cases. I have turned most of the work over to Dr. Broun and his results are most satisfactory.

Abdominal Section for a Large Fibroid of the Uterus.

Dr. CLEVELAND: Miss M., admitted to McDonough's Memorial Hospital March 1, 1898. Age, 43. Began to menstruate first at 14, and has continued to do so regularly and without pain till about ten

years ago, when she began to have pain with menstruations, and this pain recurred at each menstruation for about five years, when it gradually ceased and has not occurred for the last four years. She has never had menorrhagia nor metrorrhagia. Six years ago she observed an enlargement in the right side of the abdomen low down. This has gone on growing till it fills the whole abdomen, interefering with respiration and making it difficult for her to walk. Both legs are very œdematous. She is apparently very strong and in other respects appears to be well. Her pulse is strong and full. Her mother had a large tumor, from which she died, without operation. Diagnosis.—Large fibroid of the uterus. The chief interest in this case to me is, not in the size of the tumor, but in several features of the technique employed in its removal. I have long held the belief that the lifting of the tumor out of the abdominal cavity in hysterectomy, at the beginning of the operation, is fraught with danger to the safety of the woman. The incision is not only unnecessarily large, but the extension surface of the tumor must suffer more or less from exposure in handling. Before the nerve supply is cut off there must be a certain amount of reflex irritation of sympathetic nerve centres, thus contributing to shock. With the tumor left in the abdomen and the patient in the Trendelenburg posture, the intestines subside towards the diaphragm and, in cases of large fibromata, are protected from air and handling by the tumor itself. It was to carry out these ideas that the following technique was observed in this case. The abdomen was opened by an incision, beginning as low down on the pubis as possible and extending to an inch above the umbilicus. The incision was kept open by four traction sutures of silkworm-gut, two on either side, passed through and tied to the integument at the borders of the pelvis. The patient was placed in the Trendelenburg posture. The tumor was found to have rotated so much that the body of the uterus was in the extreme right iliac fossa. Without great difficulty the tumor was turned back so as to place the uterus, which was about four inches in depth, in the median line. The tumor itself, a true fibroid, appeared to be developed from the posterior surface of the uterus. The bladder was first separated; then the two broad ligaments were divided by the fingers into upper and lower sections. The uterine arteries were secured on either side; then the cervix amputated. The upper section of the broad ligaments were then secured by clamps and the uterus severed entirely from its connection with the body. The uterus was then bisected longitudinally with a large scalpel, being rotated sufficiently to carry the incision

wholly around. The two half sections were then drawn out separately without much difficulty. I believe I could have done the work through a smaller incision and then, if necessary, quadrisected the tumor. I do not mean to express myself as being an advocate of very short incisions. I believe in having the incision long enough to enable the surgeon to do his work without being hampered for want of space to work in.

In the performance of abdominal hysterectomy I am in the habit of securing the uterine arteries first, because, as that cuts off two-thirds of the blood supply, I find there is usually less loss of blood. In this particular case there was a good deal of bleeding from small vessels and some loss of venous blood from large sinuses, which lengthened the operation to beyond two hours and a half. There was no shock following the operation and it is now the beginning of the fourth day and the temperature has not reach 100°. The appearances are in favor of recovery. If I had lifted this tumor from the abdomen in the beginning of the operation it would have necessitated an incision reaching from the pubis to the ensiform cartilage. The points, then, that I wish to emphasize, are that leaving the tumor in the abdominal cavity till the end of the operation decreases the danger of shock and possibly of sepsis, from the shorter incision required and the entire protection of the intestines. The tumor measured thirty inches in circumference and weighed seventeen pounds.

Discussion.

The President: We do not often see tumors so large that we have to divide them before removal.

Dr. Goffe: The technique of applying the ligatures or controlling the blood supply while the tumor is *in situ* is one which I have been employing for some time, but it seems to me that it must be very difficult to apply ligatures as Dr. Cleveland has described. I do not understand why he begins the operation by ligating the uterine arteries. My custom is to begin ligating at the top, *i. e.*, at the free border of the broad ligament, quilt it down to the uterine artery and then cut down the broad ligament to that point before any effort is made to deliver the tumor. I then dissect off the bladder down to the vagina, and deliver the tumor through the incision. After that it is a very simple matter to apply ligatures to the uterine arteries and amputate at the internal os. The method of bisecting the tumor, as done by Dr. Cleveland in this case, strikes me as being an excellent device. I have

never had a case in which the tumor was so large and symmetrical as this specimen. They have usually been irregular multiple tumors, which, by a little manipulation, could be delivered intact.

Dr. CLEVELAND: I do not mean to claim that there is anything new in this method. In regard to there being any danger, I think it is the safest way, for there is then less risk of hæmorrhage. If you tie off the ovarian arteries first and proceed with the removal of the tumor there is often much bleeding from large sinuses. I do not understand how Dr. Goffe reaches the uterine arteries without first dissecting off the bladder. I divide the broad ligament on either side into two sections, so that the finger can be pressed down under the lower section, to act as a guide to the ligature carrier. You can reach the limits of the cervix and you know where the uterine artery ought to be; the ligature carrier is then passed down on the finger, the ligature applied, and you can cut without fear of hæmorrhage. An operation done in this way is practically bloodless.

Dr. GOFFE: Dr. Cleveland misunderstood me. In the method employed by me the bladder is dissected off before the uterine arteries are ligated. I quilt down the broad ligaments to the uterine arteries, then dissect off the bladder anteriorly and a peritonæal flap posteriorly and ligate the uterine arteries inside of these flaps.

Fibroid Uterus.

Dr. A. B. TUCKER: This fibroid uterus was removed from a colored woman, 24 years of age. The special point of interest connected with the case is that no ligatures were employed, and yet not more than three ounces of blood were lost during the entire operation. I caught up all bleeding points with forceps and closed the broad ligaments over them afterward, making them extra-peritonæal. By this method the operation is very much shortened, the time usually consumed in applying ligatures being saved.

DISCUSSION.

Dr. EGBERT H. GRANDIN: I question if this is a procedure one would care to adopt ordinarily. The ovarian artery might be controlled in this way, but I would hesitate to trust the uterine artery without a ligature.

Dr. A. B. TUCKER: It would not do in cases of malignant disease, but in fibroma I think it can be safely employed.

Resection of the Hepatic Flexure of the Colon for Cancer.

Dr. GOFFE: This specimen is not strictly a gynæcological one, but as it was removed from below the diaphragm, which I believe is now accepted as the upper limit of the gynæcological field, I think it is not out of place to show it here, especially as Dr. Polk has taken it upon himself to extend the range of gynæcology to the thyroid gland by presenting such a specimen here not long ago.

This specimen was removed from a single woman, 28 years of age, who came under my observation in October, 1897. At that time she complained of dysmenorrhœa, which showed itself by severe backaches, pain through the lower part of the abdomen, and intense headache at each menstrual period. There was also some pain in the region of the right kidney, which extended down along the ascending colon as far as the caput. Her general health was bad, appetite poor, and there was indigestion and mal-assimilation. Upon examination I found a sharply retroflexed uterus, but no other abnormality in the pelvis. The liver was slightly enlarged and on full inspiration a body could be forced down below the border of the liver and grasped between the two hands, placed as in diagnosticating movable kidney. This body slipped back out of reach on expiration. Pressure upon it caused nausea. A diagnosis of movable kidney was therefore made and operation advised. She entered my private sanitarium and on November 4 anterior colpotomy was performed, the uterus delivered into the vagina and the appendages carefully examined. There were no adhesions. The round ligaments on each side were shortened in the usual way by lapping them on themselves and stitching them with fine twisted silk. The uterus was also curetted and packed with iodoform gauze. The usual lumbar incision for nephrorrhaphy was then made, but the kidney was found in its normal position and the tumor, which was supposed to be the prolapsed kidney, could not be detected at this time. The condition of the patient did not justify any further procedure, so the wound was closed with catgut and silk sutures without drainage. The gauze packing was removed from the uterus and vagina on the fourth day. For the first three days the patient's stomach was very irritable; all food was rejected and rectal feeding was employed. Small doses of calomel administered on the third day relieved the stomach symptoms and the patient made an uninterrupted and satisfactory recovery, returning to her home at the end of the fourth week. She continued to improve steadily until about the middle of January, although her stomach was irritable at times and she complained of pain

along the ascending colon and in the region of the liver. From this time forward she suffered from serious attacks of vomiting, which occurred about one week apart and lasted three or four days. On February 18 I was called to see her at her home in Jersey City, and found her in the midst of one of these attacks. Nothing seemed to give relief except hypodermics of morphine. A careful examination at this time disclosed a tumor at the lower border of the liver, about as large as my fist, somewhat irregular in outline and boggy to the touch. There was more or less obstruction of the ascending colon and distension by semi-solid material reaching down to the caput. The patient complained of considerable pain and a most annoying gurgling in the colon. I made a diagnosis of cyst of the gall-bladder with calculi and obstruction of the cystic duct and advised operation. The patient was made comfortable by a hypodermic of morphine and rectal stimulation and was transferred to my sanitarium in a carriage. A study of the case during three days seemed to confirm my diagnosis, and on February 22 I operated with the expectation of doing a cholecystotomy. The perpendicular incision was made along the outer border of the rectus muscle of the right side from the lower border of the ribs downward but, much was my surprise, upon seizing the tumor and dragging it into the wound I found that it was not a cyst of the gall bladder, but a growth in the hepatic flexure of the colon. I immediately resected five inches of the intestine, which I now show you. On the peritonæal surface there was no inflammatory process and no adhesion, although at the proximal side of the growth, *i. e.*, at the upper end of the ascending colon, there was great retraction which was sufficient to cause serious obstruction of the bowel. Upon inverting the gut we find a cauliflower growth resembling a tomato filling the entire lumen of the gut with the exception of a small irregular passage the size of a goose-quill. I have not yet subjected the specimen to a pathologist for the reason that I desired to present it intact. There is little doubt, however, that it is a malignant growth, and the remarkable feature of the case is that it should occur in an unmarried woman twenty-eight years of age. The hæmorrhage in the mesentery was controlled as usual, and an end-to-end anastomosis was made; three rows of sutures being employed, the first two continuous and the third interrupted. It is now just two weeks since the operation and the patient is making a most satisfactory recovery. I neglected to say that upon examination prior to the last operation the uterus was found in perfect position, and the patient gave a history of having passed through two menstrual periods since the first operation, which were

entirely free from pain. There is no history of malignant trouble in the family, with the exception of a distant cousin who died of what was supposed to be cancer of the stomach.

Pregnancy in an Accessory Tube: Rupture.

Dr. BRETTAUER showed the above specimens, but withheld a complete report on the case until a microscopical examination has been made. As it would be necessary to destroy the specimen for that purpose it was demonstrated to-day. A full report will be submitted to the society at a later meeting.

DISCUSSION.

Dr. J. CLIFTON EDGAR: There is no difficulty in solving this problem, for it has been proven that the spermatozoa can migrate about the peritonæal cavity.

Sterilizing Catgut by Cumol, as carried out at the Woman's Hospital.

Dr. LE ROY BROUN: I have brought here to-night the different forms of apparatus used at the Woman's Hospital for sterilizing catgut by cumol.

This means of sterilization is not a new one. It is only on account of its value and the small recognition it has received that I bring it before you. The method was first brought out by Krönig four years ago..

Two years later Dr. Kelly, of Johns Hopkins, was induced to look into the method on account of the trouble experienced at that time from sepsis following the use of catgut which had been sterilized by alcohol under pressure. Under his direction Drs. Clark and Miller, of his staff, instituted a series of experiments, infecting pieces of catgut with various bacilli, sterilizing some of these in cumol, and at the same time carrying on a check culture on agar with pieces that had not been sterilized. Similar cultures were attempted with the pieces that had been sterilized. In every instance colonies were grown from the pieces not sterilized and in no instance could colonies be propagated from the pieces sterilized.

The original method of Krönig called for placing the catgut after sterilization in benzene. Drs. Clark and Miller allowed some benzene to evaporate at the temperature of the room to a small volume. From

this a culture was obtained on agar, the especial nature of which was not determined. This led Dr. Kelly to place his catgut after sterilization in sterilized tubes stoppered with cotton, enough being placed in each tube for one or two ligatures. This is the method, I understand, at present used in the Gynæcological Division of Johns Hopkins. Before showing the apparatus, a few words about cumol will not be inappropriate.

It is one of the derivatives of benzene, and is chemically known as isopropyl benzene. It is a clear, straw-colored liquid, boiling at 151° C.

Another derivative, pseudocumol, known chemically as a trimethylbenzene, is similar in most respects to cumol, yet has the advantage of boiling at 165° C. This pseudocumol occurs in coal-tar, and is obtained from it by fractional distillation. It is this that is used in the sterilization of the gut and not cumol, which boils at 15° C. lower temperature.

It is a well-known fact that raw catgut contains at all times a certain amount of hydroscopic moisture. Upon the failure to eliminate this depends failures in sterilizing gut at high temperatures. This moisture is first driven off before the gut is placed in the sterilizing medium.

Sand Bath.—In order to bring up the pseudo-cumol safely to 160° C., a temperature near its boiling point, a sand bath is used. The vessel containing the pseudo-cumol is surrounded, bottom and sides, by sand, a half to one inch thick. This is easily done by placing the vessel containing the liquid in a larger metal vessel having already about an inch of sand in the bottom, then filling the space between these two vessels with sand.

Method in Use.—The raw catgut, as bought from the dealer, is rough; that is, not sand-papered. The sizes in use are 0, 1, 2, 3, and a small amount of 4, though this is rarely used. Each size is kept by itself, and is cut in one yard lengths, amply sufficient for a double ligature.

These lengths are wound loosely on small glass reels, which have for convenience a hole through one of the flanges. Through this hole the loose end is put to prevent the annoying unwinding of the gut. These reels, each containing a yard, being ready, a number of the same size are tied loosely together. Several of these bundles are placed in a wire gauze cage.

Gauze Cage (See Photo. No. 1).—This cage is made smaller than the sterilizing vessel, and rests on three projections (feet), the object being to have the cage simply rest in the vessel and not come closely

in contact with it. The cage, with the bundles of wound reels, are placed in the sterilizer and a thermometer is suspended, so that its bulb shall be near the centre.

The sterilizer being cumol, the heat is applied and the temperature raised to 70° to 80° C. This temperature is maintained for some two



Fig. I. Cumol Sterilization.

hours. At the expiration of this time the gut is thoroughly freed of its moisture. The pseudo-cumol is now poured in, well covering the cage containing the reels. The heat is pushed until the thermometer registers 160° C. This is maintained for one hour.

The heat is now withdrawn, and if wished temperature is allowed to drop considerably before drawing off the fluid, which is preserved for future sterilizations. The temperature maintained at about 100° C. until all of the fumes of cumol cease to come off. The catgut is now sterile and ready for use.

To preserve it, the custom at the hospital is to have ready a steril-

ized dish filled with fresh absolute alcohol, also a number of four-ounce sterilized glass-stoppered bottles, containing fresh absolute alcohol.

Each bunch of reels is removed with sterilized forceps and placed in the dish. There, under alcohol, the string binding them together is



Fig. II. Cumol Sterilization.

cut with sterilized scissors. These reels are then transferred by a sterilized instrument to the bottles. Each bottle contains several reels, all being of one size.

There has been made for the Johns Hopkins Hospital by the K-n-y-Sheerer Company of this city, a very handsome and serviceable cumol sterilizer, the cut of which I present here. This has an outer jacket, the space between which and the cumol vessel is filled with sand. The instrument is thoroughly safe and satisfactory, and is in use at the Woman's Hospital. The lamp, as represented in the cut and which is furnished with the sterilizer, is not satisfactory. It does not give suf-

ficient heat. There should be in the place of it a good portable hand gas stove.

Extemporized Sterilizer.—In cases where this complete apparatus cannot be readily procured a thoroughly serviceable one can be made



Fig. III. Cumol Sterilization.

up by procuring a large-sized metal pail, covering the bottom with sand for about an inch. Place in this an ordinary anatomical jar of such a size that its top will not reach quite to the top of the pail, and its sides will be from one-half to one inch from those of the vessel. Fill this space with sand, and you will have an excellent cumol sterilizer, good for all ordinary purposes. To prevent the catgut from coming in con-

tact with the jar a layer of cotton is first placed in the bottom, a fine wire-meshed gauze is then rolled in the form of a cylinder, smaller than the diameter of the specimen jar. This is put in place, and cotton tightly pushed in between its sides and those of the jar. To provide a roof and an escape for the cumol vapors, nothing is better than a large glass funnel, fitting well over the top of the jar. Through the neck of this can be suspended your thermometer, and over the neck can be fitted a rubber tube, the other end of which rests in a bowl of water. This form of apparatus was formerly used by Drs. Clark and Miller in their first sterilization of catgut by cumol. I append a cut as a better understanding of the description. To make the "joint" between the glass funnel and jar reasonably tight it would be well to stretch around the outer edge of the jar two or three wide rubber bands. The funnel resting on these will give a very satisfactory joint, especially since there is no confinement of the vapor.



Fig. IV. Cumol Sterilization.

As a matter of precaution to prevent the liquid from possibly igniting if the funnel should be knocked off, a piece of fine meshed wire gauze cut the size of the jar can be laid on its top. Over the free edges of this and the jar the rubber bands can be stretched. The evident advantages of this method of sterilizing catgut are many.

1st. *Safety.*—This method is absolutely safe, as compared with alcohol. Being a hydrocarbon, it is inflammable, hence ordinary care should be exercised not to allow the vapor to escape close to a flame. The condensation of the vapor is best done by allowing the exit tube to rest in water. Another reason for this is its disagreeable heavy odor.

2d. *Sterility.*—Gut sterilized by this method is absolutely freed of all spores and germs. It is recognized that a temperature of 150° C.

maintained for one hour, will destroy all known bacilli and their spores.

The temperature maintained in this is 160° C. for one hour.

3d. *Economy.*—The cost of pseudo-cumol is $6.40 a gallon. It boils at 165° to 167°. The temperature of 160° just below the boiling point does not vaporize much at one sterilization. It can be used as long as it lasts.

4th. *Strength of Gut.*—Gut prepared by this method and kept in absolute alcohol, apparently loses none of the strength of the original raw gut. Of such strength is it that the No. 1 or 2 size will withstand the hardest pulling.

For those who fail to find this to be as stated, if the fault is not found in the original raw gut, it will be found either in the fact that all of the hydroscopic moisture has not been driven off before the sterilization has been commenced, or in their allowing the gut to come in contact with sides of the sterilizer and hence baked too much. To prevent this, particular care should be exercised not to allow the inner gauze cage to rest against the sides of the sterilizing cylinder.

The time of absorption of this gut in the tissues I would think to be as that prepared in the ordinary way. The sterilization of chromocized gut by this method does not impair its integrity in any way. To Mrs. Ferris, who is in charge of the operating room for major cases, is due the credit of suggesting that this method be adopted by the hospital.

To Drs. Ogier and Westman, of the resident staff, is due the credit of enthusiastically following it up and producing gut in which every confidence is placed.

*Birth of the Secundines: A Clinical Study of the Relative Frequency of Methods of Birth of the Secundines and of the Relations of These Methods of Birth to Hæmorrhage; based on Observations of 2,700 Cases.**

By E. A. Tucker, M.D.

(See page 569.)

Le Roy Broun, *Secretary.*

Official Transactions.

*The *Discussion* will appear with the continuation in the next number. —Editor.

TRANSACTIONS OF THE WOMAN'S HOSPITAL SOCIETY.

Stated Meeting, February 15, 1898.

The *President*, PAUL F. MUNDÉ, M.D., in the Chair.

Cancer of the Kidney spreading across Descending Aorta to Pancreas, with Secondary Deposit in Liver.

Dr. A. PALMER DUDLEY: The specimen which I present is interesting because of the obscurity of the diagnosis of the case. It consists of the left kidney, the spleen, part of the descending aorta, and the liver, of a woman forty-five years of age. The history is as follows: The woman, who had been under my observation for the past ten years, was apparently healthy up to a year ago last December. She had suffered from slight uterine trouble, and had been curetted once or twice with benefit; otherwise she was perfectly well. In December, 1896, she suddenly ceased to menstruate. At the time when the period was due, she developed a temperature which ran up to 99.5° F. in the evening and went down in the morning. She had no pain anywhere but occasionally was annoyed by gas which would roll down in the splenic flexure of the colon and then back again. She had a very prominent abdomen and looked as if she was about eight months pregnant. In 1895 she asked me to give her something which would reduce her fat, and I prescribed one quart of Hudor-Lithia water each day, which reduced her weight by twenty-five pounds in about four months. I examined her urine many times during the past year but never fouund anything which indicated disease of the kidney. During all this time the evening temperature kept up and she became very weak. She entered my private sanitarium and I tried everything in the way of drugs to reduce the temperature. Blaud's mass was also given in the hope of restoring the function of menstruation. The temperature gradually increased until it reached 101° F. at night. I then sent her to Richfield Springs, where she was under the care of Dr. Ransom. He examined her carefully but found nothing to indicate the presence of malignant disease. She returned to New York where she was seen

by Dr. Austin Flint. During her stay in Richfield Springs her spleen had enlarged considerably and Dr. Flint for this reason made a diagnosis of splenic anæmia and she was treated for this at his suggestion. Dr. Janeway then saw her with Dr. Flint but neither of them could make out any chronic disease of the abdominal viscera. On account of the enlargement of the spleen they thought she was suffering from pernicious anæmia. She had a slight cough and I made up my mind that she had some tubercular trouble or malignant disease, although she did not have the positive signs of either. Dr. Freeborn took a specimen of the blood and examined it carefully. He found that instead of 4,500,000 red blood corpuscles to the c.cm. there were only 2,400,000. He also examined the sputum for tubercle bacilli but found none. After examining her urine he sent in a written report stating that he thought the patient was suffering neither from tuberculosis nor renal disease. The pernicious anæmia was the only evidence of disease. She was removed to my house where she remained until she died. During the entire illness—eleven months—the only symptom was the rise and fall of the temperature; there was no pain of any kind until a week or ten days before death, when the liver began to enlarge and then she complained of some pain. At one time I made a diagnosis of rapid formation of gall-stones, because she had occasional spasmodic attacks of pain, and two small bodies close together could be felt in the region of the gall bladder. Later it was discovered that these were cancerous deposits. It is probable that the pain referred to was caused by the blocking of gas in the splenic colon. The patient gradually grew weaker and died in November, 1897, nearly a year after the onset of the disease.

I am sorry that Dr. Freeborn is not here this evening, because I want to submit these specimens to him for microscopical examination. From their appearance, I am sure the condition is one of malignant disease beginning on the external surface of the left kidney. This would explain the fact that the urine coming from the kidney did not reveal the existence of the disease. It then spread from left to right, involving the descending aorta, the entire pancreas and resulted in liver deposit and enlargement of that organ. The duration of the disease was apparently from December, 1896, to November, 1897, when it was terminated by death. At no time were casts or albumin found in the urine. The spleen is not now as large as it was. At one time it was twice that size but decreased somewhat under the administration of methylene blue. It has become still smaller by lying in formaline for two months. The liver is very large but I have not yet had it weighed.

DISCUSSION.

THE PRESIDENT: The case is certainly a very interesting one. As I understand it, the only diagnosis arrived at during life was that of pernicious anæmia—a condition which is not clearly understood. Not long ago I was asked to see a case of this kind occurring in Dr. Meyer's service at Mount Sinai Hospital. The patient was a woman who was five months pregnant. He suggested the advisability of terminating pregnancy because he thought there was some relation between this condition and the disease. I told him the patient would probably die if he attempted to do this. It seems to me that the very last thing to do was to subject a woman suffering from thinness of blood to the hæmorrhage which would necessarily accompany an induced premature delivery. Nothing was done, for we were at a loss to know how to treat the condition, and the woman gradually became weaker and died about a week after admission to the hospital. Dr. Meyer looked up the literature of the subject and found an article written by some German in which were reported a few cases of pernicious anæmia occurring during pregnancy, all of which terminated fatally.

Dr. P. F. CHAMBERS: In regard to the absence of pain in Dr. Dudley's case, I have noted this in cases of renal disease. I do not know whether the kidney is more free from pain when diseased than are other organs of the body but I have seen advanced cases of kidney trouble in which this symptom was absent.

Dr. J. RIDDLE GOFFE: It seems to me that this kidney is large enough to have been discovered during life by the methods of examination now in use. Indeed, in a woman possessed of only a normal amount of adipose tissue a kidney of the size of this one should be palpated without difficulty. Even if the urinary analysis gives no indication of kidney disease an exploratory incision for the purpose of diagnosis would not only be permissible but positively indicated. If the disease began in the kidney and the infection of the liver was secondary, the possibility of cure might have been within the reach of prompt surgical interference. The saving management of the case rested therefore primarily upon the discovery of the enlarged kidney, which was not done.

Dr. DUDLEY: It was not possible to detect the enlargement of the kidney because it was completely overshadowed by the still more enlarged spleen. Dr. Janeway did think he felt an enlargement there when he pressed down on the spleen but he was not sure of it. Dr. Freeborn examined the urine and reported two or three weeks before

the patient's death that he discovered nothing to show disease of the kidney. I even had her eyes examined by Dr. Valk but no retinal changes were found. I thought of having an X-ray examination made but this was not done. The temperature never went above 101° F. but it fell every morning like a typhoid temperature. The patient digested her food well, and there was no intestinal disturbance. She simply became weaker and weaker until she died. I do not know of any examination which would have revealed the true condition.

Epithelioma of the Clitoris.

Dr. J. RIDDLE GOFFE: The first specimen which I present tonight is one of epithelioma of the clitoris. The evidence which the specimen furnishes of the presence of this disease is extremely slight. The location of the growth is somewhat unusual, for instead of being situated on the glans clitoridis it occupies a position on the left side of the prepuce. The case is therefore of interest more from the peculiar situation of the growth, the early lymphatic infection, the extensive operation that was done and for the history than for the appearance which the specimen presents to the naked eye.

The patient, Mrs. C., of Poughkeepsie, N. Y., aged 43, was sent to me by her family physician in September, 1897. She has never been pregnant. She complained of a feeling of soreness in the vulva and said those parts were swollen at times and painful. She had been under the care of her family physician who had endeavored to remove the ulcer by caustics, but failing in this decided to seek consultation.

I found the tissues in the immediate neighborhood of the growth very sensitive to touch, and the chain of inguinal glands on each side infiltrated and very nodular. I advised immediate operation, and within a few days, under general anæsthesia with the intent of removing the lymphatics first, according to the mode of procedure in Halstead's operation for amputation of the breast, I made free incisions parallel with the groin on either side, beginning at the superior spine of the ilium, the two incisions meeting in the median line at the lower border of the mons veneris. A transverse incision was then made across the vestibule just above the meatus urinaris, extending beyond the labia minora on either side, its ends being united at right angles with the primary incision, thus removing a square of tissue containing the clitoris. The chain of lymphatics was removed from either side from the outer angle of the incision down to the symphysis, and then the tissue was stripped off the anterior face of the symphysis down to

the bone. On reaching the rami of the clitoris and before it was amputated, a strong catgut ligature was made to transfix the base of the clitoris and was tied on either side. Although there was a great deal of strain on the flaps, they were brought together and stitched with silkworm-gut, covering in all the denuded surface. All the stitches held, with the exception of a few at the angle of union. These tore out, and the denuded surface thus left was eventually covered over by granulation. The patient returned home at the end of four weeks and I heard nothing from her until the first week in January of this year, when she again presented herself at my office, saying that the sore had broken out again. I found the stump of the clitoris surmounted by a small but rather angry looking ulcer which upon being treated with caustics gave no evidence of healing. The patient was again anæsthetized and the surface which had healed by granulation was removed and the rami of the clitoris followed up to their attachment to the bone on the ramis of the pubes, where they were ligated with catgut and the wound closed with fine silk. The patient, who had greatly improved in general health since the first operation, recovered quickly from the second and returned to her home apparently cured.

The remarkable feature of the case is that what seemed to be an insignificant ulcer upon the foreskin should have been attended by such marked indications of absorption and so persistent in its resistance to treatment.

The pathologist who examined the specimen at the New York Hospital laboratory pronounced it a well-marked epithelioma.

Case of Ectopic Gestation.

The second specimen is the fœtus, ruptured Fallopian tube, ovary, and vermiform appendix removed from a case of ectopic gestation. On Monday, February 7, 1898, Dr. Sherman, of Yonkers, N. Y., called me to see a case in consultation with him. The following is the history: Mrs. H. M. B., aged thirty-six, mother of one child now seven years of age, was curetted for chronic endometritis three years ago. Since that time the patient has been free from leucorrhœa and gives a history of having menstruated regularly until October, 1897, when the molimen was delayed and was brought on by artificial means. Menstruation appeared in November, in December, and also in January, but was attended by considerable pain and continued in a dribbling way during two or three weeks each time. She had had some symptoms of pregnancy, such as nausea and a feeling of fulness in the breasts.

Upon examining the patient under anæsthesia, I at once recognized the presence of a tumor attached to the posterior wall of the uterus and filling the posterior part of the pelvis. The condition of ectopic gestation with rupture immediately presented itself to me and in this Dr. Sherman agreed. Just when rupture had occurred, it was impossible to say, but as there were no symptoms indicating that the hæmorrhage was continuing, an emergency operation did not seem imperative. The patient was therefore put to bed and allowed to recover from the anæsthetic, and arrangements were made to remove her to a place where the surroundings would be more suitable than those of her home for the indicated operation. Accordingly on the following day she was transferred to St. John's Hospital in Yonkers, and on Wednesday I performed laparotomy for the removal of the mass. Upon making the incision through the peritonæum a large blood clot was found adherent to the interior of the abdominal wall, thoroughly organized, and reaching down into and completely filling the pelvis and crowding the uterus well to the front. The main part of the clot was thoroughly organized, was adherent to the posetrior part of the uterus, broad ligaments, ovaries, walls of the pelvis, intestines, omentum, and vermiform appendix. Small irregular branches of clotted blood reached from this up into the abdominal cavity, filling the spaces between the coils of intestine. These were not organized. After being freed from its attachments, the large clot was lifted out *en masse*. The fœtus which I show you was found at the bottom of the cul-de-sac, and the tube and ovary of the left side were removed after a catgut ligature had been applied. Clots of blood were removed as thoroughly as possible, the pelvis was well flushed with salt solution, and a gauze drain protruding from the lower angle of the wound placed in the bottom of the cul-de-sac. The vermiform appendix which was very much in evidence from its length and general congestion and which was firmly imbedded in the clot, was also removed.

The blood and the plastic exudate were apparently free from any infection and a favorable prognosis was therefore given. This has been justified by the course of events since the operation. With one or two slight complications, convalescence has gone steadily forward. There has been some difficulty in getting the bowels to move, and the stomach for the first three days was irritable. On the evening of the fourth day the patient showed some signs of toxæmia by her mental condition. She became restless, indifferent, and childish, and at times talked incoherently. There had been pretty free drainage from the pelvis through the gauze, but indications showed that it had not been suf-

ficient; the gauze therefore was removed, the pelvis flushed out with salt water through a drainage-tube, and one-sixth of a grain of morphia with 1-150 of a grain of atropia was given. The pelvis has been irrigated every twelve hours, and the morphine continued in sufficient quantity to give rest and relaxation. This treatment seemed to meet the indications. She rallied promptly from the condition described and steadily improved, and may now be safely considered out of danger.

The specimen shows a fœtus which is evidently about three months old, although it is not as large as a fœtus of that age normally developed in the uterus. I think we may infer from the history of the case that conception took place in October. The limited nutrition which the fœtus receives under the abnormal conditions of existence in the tube is much less than in the uterus and development much slower. The laceration in the tube was extensive—fully two and a half inches in length, and the surprising circumstance of the case is that hæmorrhage was not more serious than it was. Hæmorrhage had stopped spontaneously and no bleeding point could be found at the time of operation.

DISCUSSION.

Dr. DUDLEY: The first case is interesting from one standpoint, viz., I do not think enough was done at the first operation. Dr. Goffe should have gone down to the pubic bone and removed all the rami of the clitoris and cleaned everything out as nicely as he did the glands of the inguinal region. Had this been done a recurrence of the growth would probably have been prevented. I note that in this case extension was from the rami. I have seen two cases of epithelioma of this region and both made a perfect recovery.

In regard to the second case, I would like to make just one criticism. In such a case I think it is always best to drain through the cul-de-sac rather than through the abdominal incision in order to avoid just what happened in Dr. Goffe's case—sepsis. The woman became septic and he was obliged to wash her out some days after the operation. I do not think that iodoform had anything to do with the symptoms although it does occasionally produce bad effects, especially when wet gauze is used. Only to-day I had a case of ectopic gestation upon which I operated at the Post-Graduate Hospital. I drained through the cul-de-sac, using a long strip of gauze, one end of which was left protruding through the abdominal wound and the other through the vagina. My assistant held each end of the gauze and drew the uterus well forward out of the way, thus permitting me to flush

out the pelvic cavity very easily with hot boiled water before closing the abdominal wound. I have never seen a patient develop pelvic peritonitis when this was done.

Dr. CLEVELAND: I agree with Dr. Dudley. For a great many years I have drained through the vagina in the manner he has described and have entirely given up drainage by means of a tube in the lower angle of the abdominal wound. The natural way to drain is down-hill. There is no danger of the occurrence of a fistula for the incision in the posterior fornix always closes readily.

Dr. LE ROY BROUN: In regard to the first case reported by Dr. Goffe, we all recognize that such cases are very rare. I have never met with a case while at the Cancer Hospital but since then I have seen one case in the service of Dr. Cleveland at the Woman's. He cut down to the pubic bone but there was an early recurrence of the disease.

As to the second case, I had the pleasure of showing at our meeting two months ago a very pretty specimen of unruptured ectopic gestation of some two months, in which the fœtus was lying in the tube. In the large majority of cases of tubal pregnancy the patient is supposed to be suffering from a miscarriage and it seems to me that it is the part of wisdom to examine these patients frequently in order to be sure there is no enlargement outside of the uterus.

Dr. GOFFE: In regard to the remark which has been made to the effect that I was not sufficiently thorough in my work in the first operation, I will say that I recognized the fact that there was lymphatic involvement and considered that I was doing a pretty radical piece of work, inasmuch as the disease was situated upon the prepuce and not on the glands. What the ultimate outcome of the case will be remains to be seen.

In the second case it was impossible to get the pelvis well cleared out. The exudate was everywhere attaching the clots to the omentum, the intestines and the walls of the pelvis. After I had worked as long as I considered advisable, I closed the abdomen. Now, as to the question of infection, the patient had no septicæmia and no peritonitis. What the toxæmia was I do not know. It was not of a severe order. It is quite possible it was iodoform poison. The indication was to remove the gauze and wash out the pelvis and this I did.

It is interesting to consider what would have been the result in this case had operative interference not been resorted to. There are cases of ectopic gestation on record in which the fœtus became encysted or sloughed into the rectum or vagina and was spontaneously discharged. In my case the large quantity of exudate thrown out was the effort of

Nature to shut off the peritonæal cavity and it is possible that the fœtus might have become encysted. It is, of course, much better to operate in these cases because then one is more sure of the result and a cure is effected in a much shorter time. Moreover, it is by operation only that one can assure one's self that hæmorrhage has entirely ceased.

THE PRESIDENT: It hardly seems to me that in our present state of knowledge we would feel like leaving Nature to care for such cases as these.

A Cyst of the Broad Ligament and a Multilocular Ovarian Cyst.

Dr. CLEVELAND: These two cysts that I present were removed yesterday at the Woman's Hospital. The first case was that of a young unmarried woman of twenty-five, apparently in good health. She menstruated first at the age of sixteen, and menstruation has always been regular, of the twenty-eight-day type, lasting for three days and without pain. At the age of twenty she first noticed an enlargement in the lower right side of the abdomen, which has gradually increased till it became so large that she sought medical advice. She entered the hospital February 8, and the diagnosis of an unilocular cyst was made, but whether it was ovarian, parovarian, or intra-ligamentous it is impossible to determine. Yesterday the patient was etherized and placed in the lithotomy position and a careful preliminary examination made. The uterus was found retroverted and to the left, pressed down and held down by the tumor, though the tumor itself did not seem to reach low in the posterior cul-de-sac. I felt pretty positive, after this examination that I had to deal with an intra-ligamentous cyst. I decided to attempt its removal through the vagina. Posterior section was made in the usual way. After opening into the pelvic cavity the cyst wall was reached with some difficulty by the finger and grasped by a Jacob's traction forceps. I then attempted to cut into the cyst with the scissors and soon found that I had nearly cut through an outside envelopment of the true cyst, which I at once determined must be the lower fold of the broad ligament, and that I had to deal with an intra-ligamentous cyst. The true cyst was then punctured by sharp pointed scissors and the opening enlarged. From two and a half to three gallons of watery fluid, such as is usually found in parovarian cysts was evacuated. After the fluid was all evacuated, with some little difficulty the cyst was grasped by a forceps and, together with its covering of broad ligament, was drawn out through the vagina. The cyst itself was very easily enucleated from its envelopment. The broad ligament

out the pelvic cavity very easily with hot boiled water before closing the abdominal wound. I have never seen a patient develop pelvic peritonitis when this was done.

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THE PRESIDENT: It hardly seems to me that in our present state of knowledge we would feel like leaving Nature to care for such cases as these.

A Cyst of the Broad Ligament and a Multilocular Ovarian Cyst.

Dr. CLEVELAND: These two cysts that I present were removed yesterday at the Woman's Hospital. The first case was that of a young unmarried woman of twenty-five, apparently in good health. She menstruated first at the age of sixteen, and menstruation has always been regular, of the twenty-eight-day type, lasting for three days and without pain. At the age of twenty she first noticed an enlargement in the lower right side of the abdomen, which has gradually increased till it became so large that she sought medical advice. She entered the hospital February 8, and the diagnosis of an unilocular cyst was made, but whether it was ovarian, parovarian, or intra-ligamentous it is impossible to determine. Yesterday the patient was etherized and placed in the lithotomy position and a careful preliminary examination made. The uterus was found retroverted and to the left, pressed down and held down by the tumor, though the tumor itself did not seem to reach low in the posterior cul-de-sac. I felt pretty positive, after this examination that I had to deal with an intra-ligamentous cyst. I decided to attempt its removal through the vagina. Posterior section was made in the usual way. After opening into the pelvic cavity the cyst wall was reached with some difficulty by the finger and grasped by a Jacob's traction forceps. I then attempted to cut into the cyst with the scissors and soon found that I had nearly cut through an outside envelopment of the true cyst, which I at once determined must be the lower fold of the broad ligament, and that I had to deal with an intra-ligamentous cyst. The true cyst was then punctured by sharp pointed scissors and the opening enlarged. From two and a half to three gallons of watery fluid, such as is usually found in parovarian cysts was evacuated. After the fluid was all evacuated, with some little difficulty the cyst was grasped by a forceps and, together with its covering of broad ligament, was drawn out through the vagina. The cyst itself was very easily enucleated from its envelopment. The broad ligament

covering was then twisted a number of times to diminish its size and grasped by the Skene electric forceps. A current of six amperes was used, the forceps being left on three and a half minutes. The broad ligament below the forceps was then cut away and the forceps cautiously unclamped and removed. There was no bleeding. A few yards of iodoform gauze were then packed in the cavity. The operation was then completed.

The second specimen was removed from a woman, fifty-nine years of age. The patient had been married for thirty-one years. Her menstruation began at the age of eleven. She had given birth to one child twenty-nine years ago, and two years later had had a miscarriage. She was never pregnant again. Her menstruation all her life had been regular and attended with no pain nor discomfort. Menstruation ceased at the age of fifty-three. She has had slight flowing at irregular intervals since the age of fifty-four. Four weeks ago she had a discharge of blood by the vagina which lasted for two weeks. Two years ago she noticed a small mass the size of a cocoanut in the right inguinal region, which has been steadily growing till it filled and distended the abdomen to an enormous degree. She has suffered from constant pain, and since the appearance of the tumor, has not been able to lie on the right side. The pain is somewhat relieved by lying on the left side. On entering the hospital February 7 a diagnosis of multilocular ovarian cyst was made. Yesterday she was placed under ether and the abdomen opened by the usual median incision. Traction sutures were then passed through at the centre point of each edge of the incision, including integument, fascia, muscle and peritonæum and tied rather loosely, bringing the edge of the peritonæum up to the integument. The ends were then drawn taut to open the abdominal wound and secured to the abdominal integument at a point close to the ileum. This method I have found very useful to keep the incision thoroughly open in the place of using retractors. The patient was then turned upon her left side. Pads of sterilized gauze and a flat sponge above them were then placed over the lower surface of the wound. The cyst wall was then held securely by two large hooks, placed about two inches from each other and opened by a scalpel. The edges of the incision into the cyst were immediately grasped by Nèlaton forceps and the incision enlarged. About five gallons of a dark grumous fluid were evacuated. A number of smaller cysts within the larger were then emptied, and the cyst wall, which was greatly hypertrophied at a number of places, was, with some difficulty, removed. The pedicle, which was not large, was found twisted a number of times. The omen-

tum and intestines were attached over a space of between four and five inches, and it required some time and difficulty to free them from their attachments and a number of bleeding points had to be secured by ligature. After this was accomplished the Skene electric clamp was applied to the pedicle and six amperes of electricity were used for four minutes. The tumor was then cut away, the clamps cautiously loosened and removed. The stump immediately unfolded and bleeding appeared from the ovarian artery and from the outer edge of the severed broad ligament. The bleeding points were secured by forceps and the portion of the stump containing the ovarian artery. The electric clamp was again applied and six amperes of electricity used for four minutes. On the removal of the clamp bleeding again appeared and the bleeding points I found it advisable to secure by catgut. The left ovary was found to be atrophied. The fundus of the uterus contained a fibroid, the size of a small orange, which would probably account for the recurrence of slight hæmorrhages after the menopause. This, of course, I did not disturb, as at her time of life there is hardly any possibility of its growing. The abdominal incision was then closed by chromi-sized catgut, securing first the muscles and peritonæum together and then the fascia separately. The edges of the integument were brought together by a running silkworm-gut suture.

I have presented these cases because of their marked contrast in many pathological points, and for the interest in the two methods of removal.

DISCUSSION.

Dr. GOFFE: This first case is quite a triumph in vaginal work. I never heard of a cyst of this size being removed by this route, especially an intraligamentous cyst in which so great difficulty is encountered in enucleating and disposing of the sac. The peritonæal covering which was removed with the cyst seems unusually large and well developed. Dr. Cleveland is to be congratulated upon his success in this case.

Dr. BROUN: It is my duty and pleasure to assist Dr. Cleveland in his operations and I can recall with what ease the cyst was removed from its broad ligament capsule. The cyst wall was grasped and partly pulled out of the vagina, the broad ligament coming with it. As stated the ease with which this was stripped off was beautiful. The hæmorrhage was absolutely controlled by the hand compressing the blood vessels of the broad ligament above the portion separated. We all know in operations through the abdomen in the ordinary way how it

is sometimes a difficult matter to separate the cyst wall from its broad ligament covering; the trouble is to get the separation started, the thinness of the broad ligament at this highest point and the ease with which it tears being the chief causes of trouble.

There recently appeared in one of the journals an article by Dr. Flemming, of Denver. He advocates hysterectomy for these cysts, stating that after the uterus is removed the cyst is pulled out of its bed from below upward with the greatest ease. I doubt very much if any of us would agree with him in doing such a radical operation for this condition. Yet the ease with which he removes his cysts and the ease with which this one of Dr. Cleveland was removed from the base of the broad ligament teach me a lesson. It is this: When operating in the ordinary way through the abdomen, after emptying the cyst, instead of attempting to enucleate it from the highest point, will it not be more easily done by making an opening in the broad ligament lower down on its posterior face near the uterus, grasping the cyst wall with forceps and separating with the finger? It would seem to me to be feasible and, with the assistant grasping the vessels with the fingers, the hæmorrhage would be materially diminished if not prevented. The broad ligament being thicker in this lower portion would relieve the operation of the constant tearing of the thinner portions above.

Dr. DUDLEY: About a year ago I showed a beautiful specimen of multilocular cyst. The patient made a splendid recovery. I was obliged to break up the cyst in the pelvis before I could get it out through the vagina. It was very large and must have weighed twenty-five pounds. The patient was a large woman with a capacious vagina.

THE PRESIDENT: I understand that in one of Dr. Cleveland's cases the pedicle was twisted. This is rather unusual in large cystic tumors.

Dr. CLEVELAND: It is quite possible that I myself twisted it during the manipulations which were made.

Dr. DUDLEY: I would like to ask Dr. Cleveland what is the advantage of the electric clamp over the ligature.

Dr. CLEVELAND: As Dr. Skene claims, it stops hæmorrhage, closes the lymphatics and devitalizes the nerves. In this way it is antiseptic and renders the stump aseptic. It impresses me as being a most useful instrument.

THE PRESIDENT: We can both tie and burn. If we burn alone we have only that precaution against hæmorrhage. It seems to me unwise to trust to this alone, especially as in the second case you were obliged to tie after burning.

Dr. CLEVELAND: I do not think we should use the term "burn," for there is no real burning. It merely *bakes* the tissues thoroughly. I have used these forceps in six or seven cases and in one besides the case above related I have had a little trouble with hæmorrhage which was easily stopped. I think this danger would be entirely obviated by a longer and wider forceps and these I have already ordered, as I believe in the instrument and mean to put it to a thorough test.

THE PRESIDENT: The advantage in the cautery is that no ligatures are left behind which may give rise to infection. This is a great advantage if at the same time we can be sure that no bleeding will occur. It strikes me that it is not so much a question of *how* to operate per vaginam as it is *when* to do so. I have recently been operating from above in several cases in which, had I known that the cyst was intraligamentous, I would not have done the abdominal operation. Such cysts are best enucleated from below. In cases of hæmatocele and in cases in which there is pus in the pelvis, I often operate both from above and below.

Ovarian Abscess.

Dr. E. W. PINKHAM (by invitation): This case is interesting especially from a bacteriological standpoint. The patient was on Dr. Cleveland's service at the Woman's Hospital. She was twenty-eight years old and had been suffering for two years from pain in the right side. She was curetted in May or June last, by which procedure she was somewhat relieved for a time. Soon after, however, in August, the pain returned with greater severity, so that she was confined to her bed at times.

On entrance to the hospital Dr. Cleveland made the diagnosis of ovarian abscess on the left side, the uterus being pushed well over to the right side. At the operation, upon opening the cul-de-sac, the mass was found to be behind both layers of the broad ligament, and out of reach of manipulation. The abdomen was then opened and a large fluctuating mass was found on the left side, thin walled and imbedded in a mass of agglutinated intestines, omentum and peritonæum. It was deemed unwise to attempt removal on account of the danger of rupture. The abdomen was then closed and the abscess punctured *per vaginam*. About a pint and a half of yellow pus was evacuated and a rubber drainage-tube inserted.

A culture of the pus was taken and also several smears on slides were made. The cultures were made on nutrient agar-agar. In twenty-four hours the cultures showed a pure growth of the staphylococcus.

Later this staphylococcus was found to be the albus. The examination of the slides revealed numerous diplococci—some in cells and others outside. These diplococci completely decolorized under Gram's method of staining.

The two interesting points are, first, the judgment of the operator in not running the risk of infecting the peritonæal cavity with pus which was found to contain, although afterward, such germs which responded to the test ordinarily thought to be diagnostic of the gonococcus. Secondly, the discovery of this displococcus—living in the pus corpuscle, which could not be grown on agar-agar and which decolorized under Gram's method—in the pus of an ovarian abscess. This result is not common, the cultures and smears showing staphylococci, etc., or no growth at all.

Nephrectomy.

BY P. F. CHAMBERS, M.D.

(See page 623.)

DISCUSSION.

Dr. DUDLEY: In regard to the method of operation, it would seem that it is best to employ the lumbar incision and in this way avoid the danger of infecting the abdominal cavity. I notice that the author employed the latter method in one of his cases and then drained through a lumbar incision. It seems to me that it would have been better to have made the lumbar incision first. In the case in which there was a fistula, I would like to ask the author into what portion of the intestine it opened.

Dr. GOFFE: It seems to me that the lumbar route is best, especially when there is much enlargement of the kidney. If this does not afford room enough to work in, the peritonæum can be stripped off the abdominal wall and access thus made easy. In cases of hydronephrosis I am an advocate of conservative work instead of removal of the kidney. I think that in many of these cases the kidney can be saved by tapping the cyst and treating the ureter from above. The time has come when we can cut down upon the kidney in these cases and treat it according to the indications then presented with the view of doing conservative work. I recently saw a case in the practice of Dr. Janvrin in which there was a large fibro-fatty tumor, as large as the two fists, attached to the kidney on its internal border, *i. e.*, on the side of the kidney next the spinal column. It was a great temptation to remove

the kidney as well as the tumor but, by stripping off the peritonæum as I have stated, sufficient room was obtained to make it possible to remove only the tumor, leaving the kidney intact, which has since performed its function.

THE PRESIDENT: As Dr. Goffe has just pointed out, the question of leaving the kidney when it can be saved by incision and drainage is an important one. The lumbar route is probably the best except in cases in which the kidney is displaced. I have twice removed a kidney through the abdomen because it was displaced downward. Hydronephrosis is sometimes caused by a twist in the ureter and the condition will disappear after the ureter has become untwisted.

Dr. L. GRANT BALDWIN: Most surgical authorities who do this work much more frequently than we do disapprove of nephrotomy for hydronephrosis. They advocate nephrectomy, a nephrotomy being very apt to result in a urinary fistula. Of course, the other kidney must be comparatively normal, otherwise the kidney must be left alone. This can generally be determined by the same methods which were mployed in ascertaining the presence of disease in the kidney to be removed. A careful examination of the entire urinary excretion for a period extending over a number of days is essential.

THE PRESIDENT: There recently came under my observation a patient with a tumor in the left subcostal region which had existed for about a year. I made a diagnosis of tumor of a displaced kidney, although I was not very positive about it. I sent her to Mt. Sinai Hospital but, as the case was not gynæcological, I was obliged to put her in the general surgical service of Dr. Gerster. When she was anæsthetized both he and I examined her, but we could find no tumor. I suggested that the case was probably one of twisted ureter and hydronephrosis, the latter condition having disappeared when the ureter became untwisted. Dr. Gerster made a lumbar incision and found a large, flabby, dilated kidney. I should have stitched it to the lumbar wound but surgeons seem to prefer nephrectomy and this he did. The patient made a good recovery.

Dr. CLEVELAND: I ask this question: What is the reason of the objection to nephrotomy? I suppose it is because in most of these cases the kidney has been distended and enlarged to such an extent it is considered impossible to restore its function; or is it because of the fear of subsequent sepsis?

THE PRESIDENT: In the case I mentioned, Dr. Gerster expressed the opinion that the kidney was so distended that it could no longer perform its function. I should think, however, that the condition of the

ureter—whether it is healthy or diseased—would determine what should be done in a given case. Dissecting out a ureter is a very extensive operation. I have myself gone down nearly six inches through a lumbar incision to do this.

Dr. GOFFE: I fear that we can hardly accept the statement that the general surgeons have definitely pronounced a dictum that nephrectomy is preferable to nephrotomy in all cases of diseased kidney. Dr. Robert F. Weir has reported his experience in kidney surgery in a series of articles recently published in the *Medical News*, from which I infer that he at least practices conservative procedures on the kidney.

Dr. DUDLEY: This subject is so interesting that I would suggest that some evening be devoted to its discussion.

Dr. GOFFE: I move that we make the subject a special order of business at the next meeting.

Dr. CLEVELAND: I am in favor of this motion. I believe that the younger men should equip themselves for the surgery of all the abdominal organs, for the time is coming when, I fear, the term "gynæcologist," as an entity, will have become obsolete.

Dr. CHAMBERS: From my experience in these cases, I shall always in future take the lumbar route if I can by any means make the diagnosis. If it is impossible to make out the condition before operation, the abdominal route may be employed. By this method, too, the other kidney can be examined.

In cases of hydronephrosis I do not believe that all surgeons are in favor of removing the kidney. I did it in my cases because it was the easiest way to deal with the condition. The case was a desperate one and the patient died the night after the operation. In cases of pyelonephritis and hydronephrosis, I advocaate examining the ureters and, as they are usually diseased, as much as possible should be removed with the kidney, if the patient can stand it. I am satisfied that neither of my cases could have stood it and in one I did not have time to do anything but apply a clamp.

Dr. Cleveland's point is a good one in regard to gynæcologists doing this kind of work. I think we are more abdominal surgeons than gynæcologists and I think it is well worth while to study the surgical treatment of all abdominal tumors.

In regard to Dr. Dudley's question as to what part of the intestine the fistulous tract opened into, I am unable to say. The opening was small and the discharge slight. It healed readily.

Official Transactions.

J. N. WEST, *Secretary.*

ABSTRACTS*

This Department is in Charge of the Following Staff of Sub-Editors:

DR. T. W. CLEAVELAND, DR. G. H. MALLETT, DR. A. D. CHAFFEE AND DR. W. T. KLEIN.

SOCIETY PROCEEDINGS IN BRIEF.

TRANSACTIONS OF THE OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY OF VIENNA, OCT. 26, 1897.

R. VON BRAUN-FERNWALD: (a) *A Case of Placenta Prævia.*

The patient was brought into the clinic in a state of collapse. The cervix admitted two fingers, and through it placenta was felt in every direction. Version, according to the method of Braxton-Hicks, was performed but the patient died eight hours thereafter despite the most energetic attempt at resuscitation, whilst the child was born up to the breech.

The autopsy disclosed the following interesting condition: The placenta was large; its upper half was implanted upon the posterior uterine wall and extended almost to the fundus; its lower half, which had originally covered in the internal os, was free and folded over upon the upper portion by the pressure of the fœtal head, which lay below it. No blood was found in the uterine cavity. This condition is usually of considerable significance, for when a free end of the placenta is pushed up and it cannot be tamponed by the breech a fatal internal hæmorrhage may ensue.

(b) *Spontaneous Cure of a Fistula of the Ureter.*

Total vaginal extirpation was performed in a case of double pyosalpinx. Incontinence of urine set in three weeks later. Cystoscopic examination was undertaken several times, and, as the quantity of urine in the bladder varied but little, the diagnosis of fistula of the ureter was made, though sounding was not resorted to. One day there was an increase of over the usual amount of urine passed per urethram, with an accompanying elevation of temperature and severe pain. Thereupon a thin-walled colpeurynter was inserted into the vagina and inflated. As this caused considerable pain, the instrument was withdrawn; thereafter not a single drop of urine was passed per vaginam.

Thereupon a series of somewhat alarming symptoms appeared, all due to retention of urine. After the application of hot baths and morphine injections the quantity of urine passed increased daily until the eighth day, when all symptoms subsided and the patient fully recovered.

A. FOGES demonstrated the specimen from a case of carcinoma uteri with hæmatometra.

KNAUER: *A Peculiar Case of Tuberculosis of the Tubes.*

Beside the two tubercular tubes in this case there was a nodular tumor about the size of two adult fists, situated between the intestines and the omen-

*All Abstracts are made *directly* from original articles in the language in which they were first published.—EDITOR

tum, and bound to the latter and the right tube by numerous adhesions. Its appearance may be likened to that presented by the intertwining coils of a hose matted together. It was not of retroperitonæal origin nor was it directly continuous with the tube tissue. Its section showed it to be composed of cheesy masses, partly softened, partly purulent. The author thought it owed its formation to the repeated expulsion of the cheesy, pasty contents of the diseased tube, with encapsulation of the masses with a pseudo-membrane.

SAVOR: *Vesico-uterine Fistula with Uncommon Ætiology.*

(Described Among Gynæcological Abstracts.)

H. HUBL: *Rupture of the Uterus.*

The patient, a poorly-nourished woman, thirty-nine years of age, who had given birth to nine children in rapid succession, entered the clinic toward the close of her tenth pregnancy. She had for some time previous to her admission been subject to frequent but insignificant hæmorrhages, and for the last three weeks her legs had been swollen. Heart, lungs and kidneys were found to be normal.

The cervix admitted two fingers, and through it the fœtal head was appreciable, lying just above the brim. Placenta could not be felt anywhere. A colpeurynter was inserted into the vagina, and the patient placed into a warm full bath, in order to induce labor. Two hours later the colpeurynter was removed. The cervix was found to be fully dilated. The membranes were then ruptured; no hæmorrhage.

Hardly five minutes later, the patient, who had in the meantime become restless, complained of severe pain, and at the level of the umbilicus a trough made its appearance, the ends of which ran toward the groins. Below this furrow was a roundish protuberance resembling an over-distended bladder; but catherization drew no urine. In the meantime, while the patient's condition became more and more alarming and the tumor continued to grow in size, the birth of the child was completed, to be followed by 1600 gm. of blood and almost complete collapse of the patient. No further bleeding followed, but the pulse became progressively weaker.

The placenta was carefully released, and in so doing it was discovered that there was a sharply-outlined transverse tear about eight cm. in length in the lower segment of the anterior wall of the uterus. The uterus was thoroughly tamponed, fixed and compressed against the symphysis in a position of anteflexion, while preparations for a total vaginal extirpation were being made. In the meantime the hæmorrhage ceased and the patient began to rally to such an extent that operative interference was postponed. But suddenly she collapsed entirely, and despite most energetic stimulation, died of cardiac failure.

The autopsy showed that the rupture led to a sub-peritonæal cavity formed by the stripping up of the serous coat of the anterior uterine wall. Near the upper right hand corner of this cavity there was a rent in the peritonæum which led to the general cavity. The rupture was thus incomplete in the beginning, the subperitonæal hæmatoma forming the protuberance that simulated a distended bladder. Subsequently, near the close of the labor the rent appeared in the peritonæum, thus making the rupture complete.

DISCUSSION: R. VON BRAUN-FERNWALD says that in the case reported by Hubl it was to be regretted that vaginal hysterectomy was not carried out, as

the conditions were such that the operation could have been successfully performed. But the patient's general condition was so good that it was deemed safe to postpone the intervention until the following morning.

H. HUBL: *A Cyclops.*

The specimen was that of a cyclocephalic monster borne by a healthy primipara twenty-two years of age. At the site of the root of the nose there was a common bulbous process in which laterally two pupils could be discerned, and above these the rudimentary nasal process which appeared as a penis-like structure about three cm. in length. Beside these anomalies the specimen presented a hydrocephalus, an umbilical hernia, atresia ani, defective development of the genital organs (male), club-feet, polydactylism, persistent foramen ovale, double atresia of the ureters and hydronephrosis.—[Abstracted from the *Centralbl. f. Gyn.*, January 8, 1898.]

TRANSACTIONS OF THE OBSTETRICAL, GYNÆCOLOGICAL AMD PÆDIATRIC SOCIETY OF BORDEAUX, DEC. 14, 1897.

M. BOURSIER: *Myoma of Uterus removed by Abdominal Hysterectomy.*

The patient was forty-eight years old, and had given birth to two children. Fifteen years ago she had a profuse hæmorrhage, which was not repeated. For the last six years her menstruations had been somewhat increased in amount, and for some time she had been conscious of the presence of a tumor in her abdomen, which gradually increased in size. This growth was rounded in form, median, smooth, without nodules, movable from side to side, elastic, soft, giving a sensation of fluctuation, and without apparent connection with the uterus. The uterine cavity measured eight cm. An ovarian cyst was thought of, a laparotomy was performed and a tumor was found which was perfectly round and constituted in itself the uterine body. After removal it was found that the tumor was a pure myoma, which had in part undergone myxomatous degeneration. It was stated that pure myomata are quite rare.

M.M. DEMONS AND BINAUD: *Fibroid of the Uterus with Pregnancy.*

The patient, twenty-eight years old, came under the observation of the authors and MM. Moussous and Boursier on November 22, 1897. Believing herself pregnant in April, she had employed measures to restore the menstrual flow, which reappeared regularly until July, when they again ceased. From that time the abdomen increased in size and she became subject to very severe and rebellious pains.

Upon admission to the hospital she was examined under chloroform. The patient was emaciated; the abdomen was enormous, and contained a tumor reaching to the xiphoid cartilage; the consistence of the tumor was not uniform, its surface not regular; it presented nodules and hard and firm areas adjoining others of very soft consistence. The cervix was high in the pelvis, very soft, and was merged into the tumor. No ballottement, no small fœtal parts, no fœtal heart-sounds. The breasts were enlarged, contained colostrum and their superficial veins were dilated.

The case was considered to be one of tumor of the uterus, probably malignant on account of its rapid growth, its physical properties and the emaciation of the patient, with presumptive evidence of a co-existing pregnancy. A

laparotomy was decided upon, which revealed a tumor consisting of two enlargements separated by a constriction. The more superficial proved to be a very soft fibroid with a gangrenous interior. The second enlargement was soft and contained a dead fœtus of four and one-half months. Total ablation was performed.

DISCUSSION.—M. BOURSIER: Not at any time was the presumption of pregnancy confirmed in this case. Moreover, with that rapid evolution no one would have thought of a gangrenous fibroid.

M. BINAUD: The softening of the cervix has no great value as a symptom; it is seen even in simple fibromata.

M. LEFOUR: Isolated, it is a sign of but little value; but it acquires considerable importance when combined with other signs of probability.

M. RIVIERE, considering the probable signs of pregnancy, thinks that the enlargement of the superficial veins of the breasts is more significant than the secretion of colostrum.

M. LEFOUR: *Pelvic Measurements by Vaginal Touch. True and False Promontory.*

On November 30, 1897, a frail and weakly woman of thirty years, presenting evidences of a former rachitis, entered "la Maternité" in the last month of her pregnancy. The fœtus lay in the left dorso anterior position with the right shoulder presenting. Upon vaginal examination of the pelvis the diagonal conjugate was found to be eight and one-half cm., while the pelvimeter gave the same figure for the true conjugate. This was ascribed to an exaggerated obliquity of the symphysis. The labor was complicated by a prolapse of the funis, which could not be corrected, and led to the death of the fœtus. Basiotripsy was performed, and the fœtus was with great difficulty drawn through the funnel-like pelvis.

Upon examining the patient next day, it was found that the normal lumbar curve was absent, and that there existed in its stead a certain degree of dorso-lumbar kyphosis. What had before been taken for the sacro-vertebral angle was found to be a false promontory, above which the true prominence could be easily reached. But it could not be demonstrated which was continuous with the linea ileo-pectinea, though the lower one was apparently so. The anterior sacral foramina were then palpated, and it was found that a pair existed at the level of the lower eminence, which precluded its possibility of being the sacro-vertebral angle.

M. CHAMBRELENT: *An Embryo of Several Days in the Placenta of a Full-term Pregnancy.*

The patient having arrived at full-term was delivered of her child by means of the forceps. Upon examining the placenta, its uterine surface presented a small, whitish area about half the size of a kidney-bean, with a curved form and two black spots, one at each extremity. It seemed to be a small embryo. It was taken and mounted in paraffine, cut into sections, which, when examined under the microscope, showed the differentiation of the vertebræ, and thus led to the conclusion that it was an embryo of several days.—Abstracted from the *Journal de Médicine de Bordeaux*, January 2, 1898.

GYNÆCOLOGY.

UNITED STATES.

Diagnosis in Abdominal Disorders.

J. EASTMAN (*Denver Medical Times*, January, 1898) believes, with Tait, that: "Absolute accuracy of diagnosis is far from being possible; only the ignorant assert that it is, and only the fools wait for it." The late Dr. Parks, of Chicago, divided the abdominal cavity into two general divisions by means of a transverse line drawn through the umbilicus, and this, bisected by the median line, gives four compartments. The transverse line is an arbitrary separation between those tumors which grow from below upwards and those which grow from above downwards. "Below this line," says Parks, "the majority of tumors are not serious in character." Examination affords more accurate deductions. The tumors are amenable to common treatment. Mortality is not high primarily, and surgical interference gives permanent relief. The exceptions to this rule are cases of malignant tumors of the uterus and ovaries.

Above this line abdominal tumors, as a rule, are serious in character: deductions drawn from facts observed in examinations are less accurate; operative procedure is accompanied by higher mortality, and results obtained are apt not to be permanent (exceptions of this statement are to be found in tumors of the gall bladder, cysts of the pancreas and some abscesses and cysts of the liver).

The normal shape of the organ and the manner of its attachment determine, in some degree, the character of the development and the direction of the growth. When tumors grow from above downwards we can by inspection above the transverse line note that the tumor is affected by the movements of the abdomen, unless the growth is post-peritonæal or its attachments are very firm. Enlargements of the liver or spleen can generally be made out by dipping the hand under the abrupt inner margin of these viscera. There are of course some exceptions to this rule.

Conservation of the Ovary in Hysterectomy and Hystero-Myomectomy.

H. A. KELLY (*British Medical Journal*, Jan. 29, 1898) presents twenty cases showing the results of this plan of operating. There is a growing conviction that the ovary belongs to the same group of organs as the thyroid, thymus and pineal glands, and that, in addition to its function of ovulation, it secretes a substance which is absorbed and consumed in the animal economy, and which is necessary to it in retaining its physiological balance. Martin says: "It is probable that the ovaries, like the liver and thyroid gland, modify the blood circulating through them, and add to the blood some peculiar product of their metabolism. It may be that some of the climacteric symptoms are due to the loss of this substance from the system."

An active principle called "spermin," found in sperm by Schreiner in 1878, has been found in the thyroid and thymus glands, and in the spleen, ovaries, testes and blood, from all of which it has been extracted in the form of an insoluble spermin phosphate.

Poehl found this substance, as a normal physiological constituent of the prostate, testicles, ovaries, thyroids, thymus, pancreas and spleen, as well as in the blood. Spermin is a leucomaine, believd, up to now, to be a product of the retrogressive metamorphosis of an albumen either injurious or indifferent to

the organism. It is now shown that spermin possesses most valuable functions in connection with the activities of living beings. Spermin is an active oxidizing agent, assisting by its catalytic action in restoring the oxidizing power of the blood without having recourse to the oxygen derived from the air. It has also shown a favorable action when given to patients suffering from diabetes, scurvy, etc., in which such auto-intoxications are manifestly the result of an accumulation of retrograde products.

Injected subcutaneously, it acts as a physiological tonic in all kinds of depressed conditions such as neurasthenia, anæmia, etc.

Since the spring of 1895 the author has made an effort to retain the ovaries even in those cases where it has been necessary to remove the uterine tubes and the uterus. The result of this has been a remarkable diminution, and in some cases, complete absence of the distressing nervous symptoms of the menopause. The table presented shows only those cases in which this plan of operating was tried where the uterus was removed for myomatous or fibroid tumors. In addition to the uterus, in eleven cases, one ovary was removed; in six instances both ovaries, and in ten both uterine tubes. By consulting the last column of the chart, it will be seen that in no single instance has the operation given rise to any of the aggravating symptoms so commonly, I might almost say invariably associated with the artificially-induced menopause. The utmost discomforts experienced were slight flushes, and in nine cases absolutely no symptoms of a menopause are noted.

The technique of the operation is simple: the ovaries are the important organs to conserve, and the uterine tubes may be removed or left in, as the operator may decide best. The operation is easier if the tubes are left, and the enucleation is begun by tying off the broad ligament at the uterine cornu, including the isthmus of the tube and the utero-ovarian ligament in the first tie, tying the round ligament next and then exposing the base of the broad ligament, ligating the uterine vessels, amputating the uterus at the vaginal junction, clamping the uterine vessels of the opposite side, and then pulling the uterus up and out and ligating the round ligament, the tube, and the ovary at the opposite corner.

Inflamed or diseased ovaries or tubes were not retained.

GERMANY.

Foreign Bodies in the Uterus.

MITTERMAIER (*Centralbl. f. Gyn.*, December 4, 1897) states that the literature contains but isolated reports of cases of foreign bodies in the uterus. These bodies are usually such as are introduced into the gravid uterus for the purpose of producing criminal abortion. Among these may be enumerated hair-pins in particular, portions of instruments broken off during the course of topical treatment as electrodes, laminaria tents, etc. He relates two cases which he considers of interest, not alone in view of their frequency, but also on account of their peculiar mode of production and the therapeutic lessons they teach.

One case, a multipara, thirty years of age, sought medical advice for the relief of a very malodorous leucorrhœal discharge. The history elicited the fact that one year before she had undergone an operation for the ablation of a submucous fibroid; a silk ligature was passed around the pedicle and the tumor

was simply snipped off below this. The irregular hæmorrhages were controlled by this procedure, but shortly thereafter an offensive leucorrhœa set in; the patient became subject to repeated chills and felt more miserable than before the operation. Recently the hæmorrhages had again increased in intensity. The examination disclosed a uterus, the seat of a submucous and several small subserous fibroids, and two masses in the cul-de-sac which were recognized to be pus tubes. The uterus and adnexa were removed by vaginal section. Upon incising this organ there was found, near the right tubal orifice a small submucous fibroid about whose pedicle there was a loosely-tied silk ligature, the same that had been applied a year ago, and which had retreated into the uterine cavity with the retraction of the remaining portion of the incompletely-removed tumor, carrying with it the infection that produced the salpingitis and incited the offensive discharge. All this would have been avoided had the tumor been rationally treated by the thorough erasion of the pedicle from the uterine wall.

In the second case in which curettage had been undertaken for hæmorrhage of the non-gravid uterus, the glass catheter used for irrigating the uterine cavity broke *in situ*, and the fragments became so firmly imbedded that all attempts to remove them proved futile. The patient was thereupon brought to him. The cervix, which had contracted, was redilated, and the efforts at digital and instrumental extraction were renewed without attaining their object. The uterus was then drawn into the vagina, through an incision in the anterior vaginal wall. The anterior wall of the uterus was split from cervix to fundus with scissors and five fragments of glass, of which the largest measured almost three cm., were found imbedded in the mucous and muscular coats of the organ. After the extraction of the fragments and the curettage of the cavity the incision in the uterus was closed with a row of catgut sutures, and the organ was replaced and fixed to the anterior vaginal wall. All wounds healed by primary intention.

A Case of Vesico-uterine Fistula with Uncommon Ætiology.

Rudolph Savor (*Centralbl. f. Gyn.*, December 11, 1897) gives an account of an interesting case of vesico-uterine fistula. The patient was a II-para, 34 years old. Menstruations began at 21, and since then were regular and painless. Her first pregnancy occurred in 1892, when she was delivered of an average-sized child by means of a Cæsarean section. The incision in the uterus was closed with silk sutures. Her second pregnancy began in January, 1897. Toward the end of August the appearance of vague labor pains prompted her to seek medical advice.

She was a small, weak, poorly nourished individual, whose bony structure bore evident marks of a former rachitis. In the uterus a condition of hydramnion existed, the fundus extending to the upper extremity of the xiphoid cartilage. The pelvis was of the flat rachitic type, the true conjugate diameter being estimated at 7.5 cm. Fœtus in first vertex position. Urine cloudy and ammoniacal; contained considerable albumin; no blood.

On the evening of the day of admission she began to complain of dyspnœa, which increased in intensity during the following two days, and was accompanied by coarse râles in the chest and increased pulse and temperature rate. Her condition becoming alarming and also in consideration of the degree of

contraction of her pelvis it was thought advisable to induce premature labor, which was accordingly performed by the puncture of the membrane. This relieved the dyspnœa to some extent, but her general condition did not improve. She had a slight elevation of temperature and suffered from a moderate degree of sepsis. The pains were slow in developing, the fœtal heart became inaudible, and it was only on the second morning after the puncture that the labor was completed by the birth of a small dead fœtus. A moderate post partum hæmorrhage was easily controlled by a hot irrigation and an injection of ergotin. The urine was drawn and was found to contain blood. About one and a half hours post partum, the patient suddenly attempted to sit up, but fell back directly, became pulseless, and died within a few minutes. No cyanosis.

The autopsy pointed to sepsis as the cause of death, with its starting point in an endometritis that had developed sub-partu. The bladder was adherent to the anterior uterine wall at the lower end of the cicatrized incision made during the Cæsarean section. At the site of the lowest of the silk sutures in the uterine wall was a vesico-uterine fistula, patent and lined with a decidual membrane. The bladder was the seat of a chronic cystitis, and contained a phosphatic calculus, the nucleus of which was a foreign body which proved to be nothing more nor less than the offending silk suture. A very plausible explanation of the formation of the fistula is then offered. A small abscess had probably developed about the suture, which then contracted the adhesion to the bladder. Ulceration and perforation of both the vesical and uterine walls followed, with the escape of the suture into the bladder, setting up the ammoniacal cystitis. This, it is believed, occurred within the first year after the performance of the Cæsarean section.

France.

Painful Peritonæal Adhesisons.

MM. Nove-Josserand and Goinard (*Lyon Médical*, November 14, 1897) say that the well-known tendency of the peritonæum to react to various irritations by the formation of adhesions is a property of no inconsiderable importance to both surgeon and clinician. They often exert a favorable influence by limiting infectious processes; on the other hand, they may be the cause of acute or chronic intestinal obstruction, and they not infrequently complicate the technique of intra-abdominal operations. But particular attention is called to the fact that these adhesions may give rise to a train of symptoms consisting of pain, continued or intermittent, and functional disturbances varying in nature and intensity according to the organ affected and the degree and character of the adhesions. They claim that all peritonæal adhesions are due to either an acute or chronic inflammation with or without a serous or purulent exudate. Indiscreet manipulations with the fingers or instruments during laparotomies or the contact with irritants, antiseptics, etc., may set up an adhesive inflammation, hence it becomes incumbent upon the surgeon to avoid all such sources of irritation.

The inflammation may involve the peritonæum primarily, or, more frequently, the peritonitis is secondary to an inflammation of one of the organs it invests. The most prolific cause of peritonæal adhesions that give rise to subsequent symptoms are the inflammations of the female pelvic organs. The pain and the functional disturbances are often so characteristic as to permit of a

tolerably accurate diagnosis being made in very many instances. There may be exacerbations or remissions of the train of symptoms. Often the patient's condition is so miserable as to justify operative intervention. Three illustrative cases are cited:

Case I. suffered from a salpingo-oöphoritis which had already necessitated the evacuation of a collection of pus in the cul-de-sac. Vaginal hysterectomy was performed, but the left ovary and tube, bound down by firm adhesions, were left behind. Soon after the operation she felt a pain in the left iliac region, violent and continuous, without exacerbation or any appreciable relation with the movements of the intestines. Fifteen months later, on account of the persistence of the pain, a laparotomy was performed, and the ovary and tube were found to be firmly adherent to a loop of intestines. The adhesions were released, and the ovary and tube ablated. Mikulicz drain. Perfect cure followed; all pains vanished and did not recur during a period of observation of ten months. It is stated that the pain could not be attributed to the presence of the ovary, for that organ had undergone well-marked atrophy, as is the rule after hysterectomy.

Case II. was operated in November, 1895, for pelvic abscess, which was incised. After a brief period of relief her pains reappeared, and persisted, despite all medical applications, and a laparotomy was performed in August, 1896, with bilateral ablation of the adnexa. During all this time she had suffered from an obstinate constipation, which yielded only to the energetic administration of purgatives which produced excessively painful stools. This condition persisted after the operation. The pain was seated in the left side, was continuous, but subject to exacerbations in the form of colics, setting in two hours before defæcation, to cease upon the evacuation of the bowels. The occurrence of these phenomena was synchronous with the formation and disappearance of a tumefaction in the left iliac fossa, thus establishing the connection between the refilling of the bowel and the exacerbation of the pain. A second laparotomy was performed. An adhesion of the omentum above the left femoral arch was resected. It was then found that the sigmoid flexure and rectum were bound to the perietal peritonæum throughout their entire course through the pelvis, by bands and adhesions of variable thickness and strength. These were divided, resected or separated as each condition demanded and the constriction of the gut was thus relieved. Thereafter the intensity of the pains rapidly diminished until finally a stationary state was reached in which she experienced but moderate colicky pains that set in about half an hour before each stool and ceased after the completion of the act; but this discomfort was not to be compared with the agony she had suffered before the last operation.

Case III. suffered from an old metro-salpingitis, and had already been curetted twice. After an unsuccessful trial of medical treatment a laparotomy was performed and the adnexa of both sides removed together with the appendix which was adherent to the right ovary. During the convalescence a continuous pain, with periods of exacerbation, developed in her right side, which increased in intensity so that after a number of months she was compelled to submit to another laparotomy, when very extensive adhesions of the omentum to the parietal peritonæum of the right side were found and promptly released. After the operation the pains had considerably diminished, and the patient left the hospital feeling better than ever.

They add that in cases of peritonæal adhesions non-operative treatment is at times attended with success. Thus with liquid alimentation, revulsive measures over the painful areas and the regulation of the bowels much may be accomplished, but the surgical treatment should not be delayed after the non-operative measures had been applied for several months without success.

They anticipate the objection that is apt to be raised against their method of procedure, namely that the adhesions will almost inevitably be reformed after a laparoptomy for their correction, by stating that they are supported in their views by Nicaise Crédé and others, and offer their three cases as proofs of its efficacy.

OBSTETRICS.

Report of a Case of Spontaneous Rupture of the Uterus During Labor.

UNITED STATES.

J. B. DE LEE (*Chicago Med. Rec.*, January, 1898) reports the following case: The patient was an American, thirty-six years old, VII-para. There had been no miscarriages, and the previous labors had been normal except the fifth, which was instrumental. The woman had been in labor about ten hours when the writer arrived, collapse having set in a short time previously, after strong and continuous pains. The patient was vomiting, the pulse was 130 and thready and the face pale, but there was no external hæmorrhage. High examination showed the face mento-læva anterior, no pulsation in the child's chest, and a rupture of the lower uterine segment just above the insertion of the bladder, through which the intestines prolapsed. Craniotomy was performed and extraction by the cranioclast, blunt hook and hand was successively tried. During these manipulations the child escaped into the peritonæal cavity. Laparotomy was then resorted to, the child and placenta being easily extracted, but both possessing an almost gangrenous odor. The uterus at its junction with the vagina was torn almost completely across. The broad ligaments were bound off, the uterus extirpated and the vaginal roof closed. The patient rallied for a time, but the temperature rose, the pulse grew weak, vomiting set in, and she died in collapse, seventy-three hours after the operation. The post-mortem showed a few flakes of exudate upon the intestinal coils and the gloss of the membrane was lost. As causes of the accident in this case we may note that the woman was fat and flabby, of poor general health, with a friable uterus and strong pains. The site of the rent was peculiar, as well as its relation to the fœtus, being over the child's chest. Regarding the treatment adopted, it was first proved impossible to deliver the child by the natural passages. Amputation of the uterus could not be done on account of the situation of the tear and the thickness and friability of the cervix. It might have been preferable to drain from below, but in that case the abdomen could not have been left full of salt solution, which was done and which contributed much to the woman's recovery from shock; nor was there a drop of pus or fluid found in the peritonæal cavity after death. The fatal result, however, must be attributed to some obscure form of sepsis.

An Unusual Specimen in Teratology.

D. L. SHAVER (*Richmond Jour. of Practice*, January, 1898) attended a primipara, eighteen years old, who appeared to have a multiple pregnancy; though auscultation was negative; the presentation was occipito-anterior and the maternal parts very dilatable. Full dilatation of the cervix soon occurred and the membranes were ruptured. After the head was born labor was delayed and examination showed a hand presenting. This was replaced and the shoulders were born, when another delay occurred, the thighs being flexed and the feet presenting along the trunk. The hips were finally born, and then the child was found to be closely attached to another which was finally delivered. The first child was a girl, the second an acephalous monster attached to the breech of the first. The monster was much the larger, the combined weight of the two being eighteen pounds. The union was from sacrum to pubes, the nates being obliterated; on the anterior side of the monster, the normal distance from the vulva, was the anus, and two inches from the latter were a penis and one testicle, another testicle being found on the posterior side. The monster had two feet and one hand, but no arm nor leg. The funis was single. The union was firm, and the two presented the appearance of a child sitting on a water-bag standing on one end. An operation was done, the incision beginning at the testicle in front, a sufficient flap being allowed to bring the anus into normal position. The incision proved to be over a cavity containing about ten ounces of clear fluid, and the incision was continued close to its wall. There was no order of muscular arrangement, and posteriorly the union proved to be cartilaginous. The rectum of the living child was found about half an inch from the anus, where it gave off a branch gut to the monster; this was cut and stitched and the wound closed. While dressing the case, the author was called to see one of his best families at once, and did not further examine the monster; and being rushed with work did not see the case again for three days. Luckily the mother had done well; but the child had not nursed, only one attempt having been made to get it to take the nipple; the bowels had moved twice; the wound was doing well but the child had been much neglected (!) and died on the fourth day.

Post-Abortion Hæmorrhages.

B. GORDON (*Clin. Rec.*, January, 1898) says that the most frequent cause of post-abortion hæmorrhage is the partial or complete retention of the placenta; fragments that remain may give rise to placental polypi or pieces of decidua to decidual polypi. Finally, there may be endometritis decidualis, without polypoid formations, due to subinvolution and the non-occurrence of retrograde changes of the decidua. The patients suffer from hæmorrhages that tend to cease when they are at rest but to recur at the slightest exertion; and from the consequent anæmia with all its accompanying symptoms. In many cases the history, whether intentionally or not, is misleading; but the excessive vaginal secretion, the large size and especially the softness of the uterus and vaginal portion point to the puerperal condition. It is pathognomonic of a uterus containing a part of the ovum if it is large and flabby at the beginning of examination but becomes hard and contracted during the same. No sound should be used in examination, the danger of sepsis or hæmorrhage being too great. Treatment consists of three steps: divulsion, digital uterine examination

and evacuation, and curettage and packing. Divulsion is begun with Wylie's dilator and completed with Wathen's; rarely, when there is great rigidity, tents may be employed, or, with an anæsthetic, Hank's dilators. The speculum is then removed and a thorough digital examination instituted, any large pieces of placenta being removed by the placental forceps. An *irrigating*, sharp curette, specially made for the author, is then used, the uterus thoroughly washed out and packed with iodoform gauze, which is removed in thirty-six hours; the vagina is packed with the same, to be removed in twenty-four hours. Rigid asepsis must be preserved throughout, and to this precaution and to strict observance of these measures the author credits the fact that he has twice perforated the uterine wall without any bad results.

Great Britain.

Distemper as a Cause of Puerperal Fever.

O. Beven (*Lancet*, January 22, 1898) believes that the virus of distemper in dogs may be contagious to human beings, given a suitable nidus, and cites the following case in the wife of a kennelman whose dogs were suffering from distemper. Labor had been without accident and the puerperium progressed satisfactorily till the evening of the fourth day, when the patient had a shivering fit followed by a very restless night. The next day she was restless, had a dry tongue, a temperature of 104.2 degrees and a pulse of 132. There was no uterine tenderness, no splenic enlargement, the os was normal, the lochia sweet, and the milk flowing freely; there was slight constipation. It was learned that the husband, contrary to instructions, had come from the kennels on the third day, and had sat by his wife's bedside during the evening and slept upon the bed that night. Treatment consisted of a saline purge, quinine and bromide of potash, and syringing three times daily with Condy's fluid. Delirium set in, finally taking on a low, muttering form, and she gradually sank, dying at last on the twentieth day. Throughout there were no local symptoms, and the case appeared to be simply one of pyrexia. The drainage of the cottage and kennels was perfect, and no connection could be traced between this case and any other of puerperal fever or of typhoid. It seems, however, that the disease must have been puerperal fever, caused by the organisms of distemper.

Successful Case of Porro's Operation in a Dwarf.

S. Savage (*Ibid.*, February 5, 1898) reports the following case in a dwarf, whose height was 4 feet 3 inches, weight 100 pounds. The pelvis was of the small round type, the intercristal diameter being 9 inches, the interspinous 8 inches, and the external conjugate 7½ inches. The pubic arch was much contracted, and the fœtal head, which was of average size, could not be made to engage. Porro's operation was decided upon. The uterus was brought out through the abdominal incision and encircled below the head and appendages with an elastic tourniquet. The placental site could not be made out, and a five-inch incision was made along the anterior surface of the uterus. This was found to be over the placenta, and another incision was made to the left, the membranes ruptured, and the child extracted by the neck. A clamp was applied, the uterus amputated and the stump fixed in the lower angle of the abdominal wound. Not a drop of blood or amniotic fluid had been spilled in the peritonæal cavity, the uterus having been strongly anteverted, before rupturing

the membranes. The child breathed well, was well-formed, and of average size. The patient made a good recovery, the clamp coming away on the fifteenth day.

A Twin-birth with Eleven Days' Interval between the Delivery of Each Child.

BIROT (*Lyon Medical*, December 19, 1897) relates his experience in the management of a twin-labor, in which the birth of the second child occurred eleven days after the first. The patient was a primipara, thirty years of age. Several weeks before the expected termination of her pregnancy the membranes ruptured and thereupon the uterine contractions immediately set in. It was discovered at that time that the case was one of twin-gestation. The first child lay in a somewhat transverse position, with the head firmly engaged at the brim and the breech lying in the right iliac fossa. The heart sounds were heard below and to the right of the umbilicus. The second fœtus was placed transversely above the first, the head to the left and the buttocks to the left. Heart sounds to the left and above the umbilicus. The os became gradually dilated, and nine hours after the commencement of the labor a male child weighing 2 kil. 180 gm. was rapidly expelled.

Then the pains ceased and it was found impossible to excite further contractions by friction, hot douches, etc., nor was there any trace of hæmorrhage. Several hours later, the second fœtus still occupying its high position in the uterus, the cord of the delivered child was enveloped in antiseptic cotton and replaced into the vagina and an antiseptic dressing applied to the vulva. Excepting a gradual descent of the fœtus, the condition remained practically unchanged for fully eleven days, during which time there was neither lochial discharge nor secretion of milk. A mild antiseptic irrigation of the vagina was practiced daily, and the patient was allowed to walk about her room after the fifth day. At the expiration of the stated time the pains reappeared, and the second child was born, after a somewhat more difficult labor, lasting ten hours. It weighed 2 kil. 55 gm.

Half an hour later the placenta of the second child was born, followed by that of the first. The former was normal in appearance, the latter darker and yellowish-brown in color and its cord more or less desiccated. They were entirely separate and presented no vascular communications. In a like manner there were two distinct sets of membranes, but these were adherent for about six cm. of their surface. There had been thus two distinct ova. It is thought that they were simultaneously fecundated considering the equality in the weight of the two fœti. It is furthermore remarked that inguinal hernia was present in both children, unilateral in the first-born and bilateral in his brother.

PÆDIATRICS.

UNITED STATES.

Pertussis.

T. M. DOLAN (*Pediatrics*, January 1, 1898) gives a resumé of the latest investigations of pertussis. He mentions the theory of Wells and Caire that the catarrhal stage is that of microbic activity while the whooping stage is due to the after effects upon the nervous system of a poison generated by the microbe; they have used cocaine in treatment with apparent good results. Unruh thinks the disease an infectious catarrh of the respiratory organs, and ad-

vises the insufflation of quinine. Raubitschek has swabbed the mouth and throat with 1-1000 corrosive sublimate daily or every second day, producing a cure after four or five applications. Kurloff has studied an amœba in the fresh sputum, which he believes to be the cause of the disease. According to Nægely the paroxysms can be cut short by raising and holding the hyoid bone by its greater cornua, and with it the larynx, for from sixty to ninety seconds. Tussol was used by Rothschild and made the disease shorter and milder. Marfan believes bromoform to be the best drug. Small and frequent doses of bromide of potassium may do well. Antipyrin and digitalis, the latter to counteract the heart strain of the paroxysms is recommended. Inhalations are sometimes of value; a finely-divided spray of a one- or two-per cent. lotion of carbolic acid, the vapors of benzine or sulphur, ozone, hydrofluoric acid, naphthalin vapor or naphthalin and antipyrin have all been successfully used, but in general it may be said of inhalation treatment, that internal medication by other drugs must be combined with it.

A Simple Method of calculating the Proportions of Cream and Whole Milk required to make any Percentage Formula for Home Modification.

T. S. Wescott (*Arch. of Ped.*, January, 1898) explains a simple method of modifying milk, the essential feature of which lies in assuming a fixed average percentage of the proteids of mixed cream and milk; this percentage being constant it is easy to calculate the combined quantity of milk and cream required for a given proteid percentage in the whole mixture, and then apportion the quantities of each so that their combined fat percentage shall be the the one desired. Twelve per cent. cream is the best suited for the making of ordinary mixtures, and may be approximately obtained by skimming the top layer of average (4-per cent.) milk that has stood on iced water for six hours. Cream differs little from milk in its proteid and sugar percentages, its proteid being within one-half of 1 per cent. of that of whole milk; taking that of 12 per cent. cream as 3.80 and that of whole milk as 4.00, it is sufficiently accurate to consider that of the mixture as 3.90. Suppose, then, we wish to find the quantities of 12-per-cent. cream and whole milk (containing 4 per cent. fat) needed to make a mixture of 40 ounces containing 3 per cent. fat and 1.50 per cent. proteids. To find the quantity of mixed cream and milk required to give the percentage of proteid we form the proportion:

$$3.90 : 1.50 :: 40 : x \text{ in which } x = 15.4 \text{ oz.}$$

We must now distribute this quantity into two parts so that the combined fat percentages shall be 3. We use the formulæ:

$$\frac{y}{12} \times Q = C,$$
$$\text{and}$$
$$\frac{z}{4} \times Q = M$$

Here y and z represent the fat percentages from the cream and milk, respectively; Q, the total quantity of the mixture; C, the quantity of cream; and M, the quantity of milk, M being equal to $x - C$. We have assumed that Q is equal to 40; we must take experimental values for C, working out the formulæ to see how closely the sum of y and z comes to 3. If we take 7 as the value of C we shall get y equals 2.10 and z equals 0.84, the sum of which is 2.94, only 0.06 short of the desired percentage; if now we take C equal to 7.3, y will equal 2.19 and z 0.81, the sum of which is 3.00. The proteid percentages may be calcu-

lated backwards separately for the milk and cream, and will be found to be almost or quite accurate. In some of the low proteid with high fat percentages it is necessary to use 16 or even 32 per cent. cream; but the 12-per-cent. is suitable for all ordinary cases. We may take as the sugar percentage of the mixture 4.40, multiply the total quantity of milk and cream by this number, subtract this product from the product of the total number of ounces in the mixture (40) by the desired sugar percentage, and divide this remainder decimally by 100 to get the number of ounces of dry sugar of milk to be added. Five per cent. of lime water may be used to give an alkaline reaction. In making the mixture the sugar should be dissolved in a part of the distilled or boiled water, the milk and cream added, and the quantity then made up to the total quantity by the further addition of water. The formula for a 3—6—1.50 mixture of 40 ounces would therefore be: Twelve per cent. cream, 7 oz. 2 dr.; whole milk, 8 oz. 1 dr.; lime water, 2 oz.; sugar of milk (dry), 1 oz. 6 dr.; water, 22 oz. 5 dr. By this method we can increase the proteid value of the mixture by increasing the milk and decreasing the water coincidently, calculating the increase of fat by the formulæ. When the latter becomes too great a fraction the increase of the milk may be deducted from the cream. Thus a gradual increase of the strength of the milk is permitted without a frequent great change of formula.

Umbilical Hæmorrhage.

H. W. LOUGEE (*Massachusetts Med. Jour.*, January, 1898) says that while hæmorrhage from the umbilicus generally occurs after the falling off of the cord, it may occur before or considerably after that event. Contrary to the statements of several it is not confined to ill-nourished infants, nor does it have any connection with jaundice or disease of the liver. It is probable that the blood comes from the umbilical arteries and depends upon the persistence of the foramen ovale, the arteries once more becoming pervious under the pressure of the fœtal form of circulation; this would also explain the fœtal character of the blood and its slight coagulability. Modern treatment has usually been unsatisfactory, and the author thinks that the older method by styptics and compression is the better. He describes a case in a child eight days old, in which he first ordered the application of equal parts of kino and alum, with compression by a folded cloth; this treatment was efficient for twenty-four hours, when the bleeding recurred; he then carefully cleaned the blood away, and made four small balls of charpie, the smallest of the size of a pea, which he saturated with liquor ferri sesqui-chloridi; the smallest he then applied directly over the navel and the others successively according to their size, binding the whole in place by strips of adhesive plaster, and above this a roller bandage. No more bleeding occurred, and at the end of a week the dressing was removed; but as cicatrization was not complete, a similar dressing was applied for a second week, at the end of which time the umbilicus was entirely healed.

CANADA.

The Orthopædic Aspect of Diseases of the Nervous System. Infantile Paralysis.

H. P. H. GALLOWAY (*Canadian Jour. of Med. and Surg.*, December, 1897) says that of the large number of orthopædic cases dependent upon nervous diseases, those that date from childhood are most commonly the results of infantile paralysis; the lower extremities are the parts usually affected. The

trouble is generally mostly confined to one extremity, and it is characteristic that the muscles that have recovered or remain paralyzed are in groups. All varieties of club-foot may be due to this disease, as well as flat-foot and "weak ankles." Following the disability of the limb, there is often drooping of the pelvis on one side, lumbar scoliosis and secondary compensatory spinal curvatures. There may also be deformities of the trunk due to direct paralysis of the trunk muscles, and there is retardation of growth on the paralyzed side. The degree of recovery depends less upon medicinal treatment than upon the severity of the spinal lesion. After the acute stage, the most important advantage may be derived from natural functionating of the affected parts. This teaches the patient to use the remaining muscles to the best mechanical advantage, and with massage and electricity preserves and strengthens the fibres. Many of the deformities that require operation could have been prevented by suitable mechanical contrivances and training. If, however, operation be demanded, there should be no hesitation in making all necessary tenotomies so that the part can be put up in a normal or super-corrected position; after mechanical treatment must not be neglected, or the deformity will recur; especially is this likely to occur at night from the dragging of the bedclothes. Sometimes the transplanting of tendons of functionating muscles, so as to give them new insertions and enable them to move parts previously disabled, is of advantage. The action of such muscles may have formerly been disadvantageous, owing to destruction of their opposing groups. In selected cases of flail-joint, particularly of the ankle or knee, arthrodesis is valuable, either an excision or, preferably, opening of the joint and scraping the bone bare of cartilage in such a manner as to secure osseous anchylosis.

Intestinal Resection in a Boy of Four Years. Death.

E. A. ROBERTSON (*Montreal Med. Jour.*, January, 1898) describes the case of a boy, four years old, fairly well-nourished, who presented a large tumor in the right lumbar region extending from an inch above the level of the umbilicus to the level of the anterior superior spine, and from the middle line three inches towards the flank. It was hard, movable, had a peculiar gurgling feel, and was dull on percussion. The abdomen was distended and tympanitic, no ascites, the legs drawn up and the breathing labored. The fæces were not unlike those of typhoid fever; the urine was scanty; the temperature was 103°. There was a history extending over two weeks of paroxysmal pain, sweating, fretfulness, anorexia, slight diarrhœa, and, for two days, vomiting of food and adhesion of several coils of gut, though cysts of new growths of the mesentery green matter. There had been constipation and loss of flesh since a fall several months previously. The case was believed to be one of localized peritonitis with or malignant disease of the bowel could not be excluded. Nine days after the first examination the child was opeated upon. On opening the peritonæum two ounces of straw colored fluid of a fæcal odor escaped. A large tumor was found which, freed of its adhesions, was found to consist of a mass of bowels, hard and leathery, and glued into a solid lump; at one point fæcal matter was oozing through a perforation. The mesentery, thickened and diseased, in part gave way; the rest was ligatured; the ileum and colon were clamped and cut wide of the disease, the tumor removed, and the cut ends of the bowel united. The child came out of the anæsthetic but died eight hours later. Examination of the

tumor showed it to be a sarcoma of the small round-celled variety; it weighed 385 grammes, and measured 11.5 by 9.7 by 9 cm.; the length of bowel removed was about 50 cm. The perforation was near the junction of the ileum and cæum, the outlet of a long tunnel through the thickened bowel will. There was no obstruction, and, except at the perforation, no ulceration.

Great Britain.

The Morphology and Pathology of the Pharyngeal Pouch of Rathke.

T. Carwardine (*Bristol Med. Chirurg. Jour.*, December, 1897) describes the pharyngeal pouch as a tubular recess at the upper and back part of the pharynx which is constant in the fœtus and sometimes persists in the adult, and when visible, as in cases of cleft palate, appears as a vertical depression, perhaps with well-marked pillars at the sides. The pharyngeal tonsil when present contains lymph follicles and small mucous glands like the faucial tonsils. In the fœtus a small canal leads from the pouch to the pituitary body, piercing the sphenoid. From this pouch is formed the anterior lobe of the pituitary body, while the posterior lobe is formed from the ventricular diverticulum, the epithelium of the anterior lobe developing into glandular cæcal cavities like those of the thyroid gland. This shows a tendency to a union of the mouth with the anterior end of the medullary tube, somewhat similar to the embryological neurenteric passage between the hinder end of the medullary cavity and the hind gut in amphioxus, lizards, etc. It is quite probable that the central canal of the nervous system in mammals corresponds to the alimentary canal of invertebrates. It has been thought that the vertebrate brain is the equivalent of the supra- and infra-œsophageal ganglia of invertebrates, the conario-hypophysial tract forming the communication between the ventral or hæmal and dorsal or neural side of the head in an ancestral vertebrate. Then the pouch of Rathke would represent the mouth of the original invertebrate. The epithelial lining of the central nervous system would represent the alimentary tract of the crustean; the infundibulum, theœsophagus; the epithelial ventricles of the brain, the non-glandular stomach; the central canal of the cord, the straight intestine. The evolution has depended on the building up of nervous matter around the invertebrate stomach. Then the cerebral centres would represent the supra-œsophageal ganglia; the centres of equilibrium in the cerebellum, the infra-œsophageal ganglia; and the centres of the medulla and cord, the thoracic and ventral ganglia. Pathologically, the pouch of Rathke may be the seat of adenoids, of chronic catarrh, of cysts—either dermoid, or due to occlusion by adenoid tissue, or of glandular recesses, or from cystic changes in the lymphoid follicles—of adenomata, and, lastly, of fibromata or fibro-sarcomata, it being probable that large pharyngeal or naso-pharyngeal polypi often arise in association with this pouch.

Paroxysmal Hyper-acidity in Children simulating Migraine.

W. S. Fenwick (*Lancet*, January 8, 1898) describes a rather rare condition of hyper-acidity of the stomach in children, usually occurring between the ages of four and ten years. Mental and physical fatigue, prolonged excitement and over indulgence in sweets seem to be exciting causes. Generally there are no premonitory symptoms, but the attack begins with a severe headache, at first frontal or occipital, later diffused and accompanied with tenderness of the

scalp. The child may scream as if with meningitis, or become partially aphasic. Burning pain in the abdomen follows, with gaseous distension, pyrosis, eructations, nausea, giddiness and finally vomiting; convalescence may then be established, or the vomiting may be continued for two or three days. During the crisis the extremities are cold, the pulse small and often slow, the temperature usually depressed; there are anorexia, thirst and constipation, though sometimes the vomiting is replaced by a diarrhœa. The ejecta, which, if the attack has begun in the morning before food has been taken, consist of greenish yellow fluid mixed with mucus, show an acidity of from 0.38 to 0.52 per cent., gradually diminishing as the vomiting continues. Without a chemical examination, the disease may be confounded with migraine or recurrent catarrh of the stomach. Prophylaxis consists of the removal of exciting causes, plenty of exercise and regular meals, from which all saccharine and fatty articles should be excluded; constipation should be guarded against; bromide of potassium, combined with liquor potassæ, has seemed to be of value in preventing the recurrence of the attacks. A tumblerful of water at the beginning of the paroxysm often relieves the pains and effects a cure; later it only excites vomiting. An emetic is often useful. Sometimes a full dose of antipyrin or phenacetin will cut short an attack at its beginning. If vomiting have already taken place lavage of the stomach may be beneficial, induced by making the patient drink warm water with bicarbonate of sodium and afterwards exciting vomiting by tickling the back of the throat. The prolonged retching may be relieved by an enema of bromide and chloral.

Australasia.

Intubation in Laryngeal Obstruction.

A. J. Wood (*Intercol. Med. Jour. of Australasia*, November 20, 1897) has intubated twenty-four cases of laryngeal diphtheria, nine before the use of antitoxin, of which five recovered; and fifteen since, of which twelve recovered. Before the introduction of antitoxin large doses of bichloride were used. The following points regarding intubation are emphasized: The tubes must be correctly made. Previous practice upon a cadaver, a larynx or animals is essential. In introducing the tube the left forefinger, protected with strapping, is passed back to the pharynx, then drawn forward between the arytenoids, lifting the epiglottis against the tongue. The tube is passed into the mouth with the handle of the introducer touching the chest, the handle then raised till the tube touches the left finger, when the latter is slipped behind the tube, the handle raised to a right angle and the tube passed into the larynx; the finger should be placed on the top of the tube as the obturator is withdrawn. To prevent a young child from pulling out the tube by means of the silk, the elbows may be stiffened with cardboard held in place by strapping. The child must not be let to sit up. Nourishment may be administered with the head lying back over a pillow, semi-solids being often more easily swallowed than liquids. The nurse should be instructed to remove the tube by the silk in case of extreme dyspnœa, or if the silk has been bitten through to invert the child and express the tube by pressure from outside. Extraction, when it is necessary to use the extractor, is the most difficult part of the operation. The instrument should have a control screw, set so that the blades will open only widely enough to hold the tube that has been used. The author believes that intubation should be done

with the patient in the lying position. He now uses chloroform anæsthesia for intubating and extracting. The retention of the silk in the tube is most necessary in order that the tube may be quickly removed should it become blocked with membrane. The steam tent is useful only when dyspnœa comes on after the removal of the tube. Regarding the length of time the tube should be worn, it is better to remove it early—after two or three days if antitoxin is used—and reintubate if necessary. We must remember that the return of the dyspnœa may be very sudden.

Notes on Scarlatina.

C. SEITZ (*Münchener Med. Wochenschr.*, January 18, 1898) gives the results of his observations upon scarlatina based upon the study of 833 cases seen in public practice during a period of ten years. As thirty-three of these cases went out of his charge before the disease had run its course, there remained 800 cases of which the average mortality was 10.5 per cent.; the highest mortality was in 1889, when it amounted to 20 per cent.; the lowest in 1896, 3.5 per cent. That these mortality figures are so high is ascribed to the fact that in the class of patients under consideration the importance of isolation, prophylaxis and instructions aimed at the prevention of complications were not sufficiently appreciated.

The distribution of the cases seemed to be entirely independent of the time of the year and conditions of the weather. The greatest semi-annual figure (87 cases), as also the greatest relative number of renal complications, were attained during a summer season. The disease occurred chiefly in epidemics, but in certain houses or groups of houses it appeared to be endemic, due no doubt to persistent sources of infection. He claims that in certain cases there is a family disposition for scarlatina. In isolated cases the mortality was 7.9 per cent.; where several members of the same family were affected the rate was 13.4 per cent. The disposition, according to age, was as follows:

Thirty-three cases = 3.9 per cent. occurred during the first year of life; 421 cases = 50.6 per cent. occurred from the second to the fifth year; 298 cases = 35.8 per cent. occurred from the sixth to the tenth year; 81 cases = 9.7 per cent. occurred from the tenth to the sixteenth year.

Thus the greatest liability to the contraction of the disease was between the second and fifth years. While the cases occurring in children under one year were least frequent, their mortality rate was the highest, 40.6 per cent.

The causes of death were tabulated as follows:

Necrotic angina (with general sepsis), 26; nephritis (with uræmia), 16; scarlatina maligna, 16; myo-, endo- and pericarditis, 9; pleuro-pneumonia, 7; diphtheria, 5; meningitis, 3; œdema of the glottis, 2.

Complications of scarlatina occurred as follows:

Nephritis, 158 cases (of which 46 nephritis hæmorrhagica); angina diphtheroides, 182 cases (of which 63 angina necroticaas, 10 fœtid); cervical lymphadenitis, 98 cases (of which 18 suppurated, 6 cases angina ludovici); otitis media, 44 cases; joint affections, 32 (of which 4 cases periarticular suppuration).

In the respiratory organs, 51 cases of pneumonia; 42 cases of diffuse bronchitis; 8 cases of pleuritis; 3 cases of œdema of the glottis.

In the circulatory system, 18 cases of myocarditis; 12 cases of endo- and pericarditis.

In the digestive organs, 27 cases of entritis; 4 cases of dysentery.

In the nervous system, 14 cases of initial convulsions; 3 cases of meningitis; 2 cases of encephalitis.

Infectious diseases, 8 cases of diphtheria; 3 cases of measles; 4 cases of whooping cough; 1 case of chicken pox.

In two instances there was a second attack of scarlatina in the same individual, in one case with one year's interval, in the other with two years' interval. In the latter instance the second attack was the more severe. Relapses of the exanthem were frequently seen; usually after eight to ten days.

Upon the throat and kidney affections, the two most important complications, in point of view of their frequency of occurrence, he makes some further remarks.

The frequency of the renal complications did not seem to have any connection with the seasons of the year. It seemed rather to depend upon the character of the prevailing epidemic. Nor did protection from cold, rest in bed, regulation of the diet and other prophylactic measures seem to have any marked influence upon the occurrence of the nephritis, for, despite the usual lack of appreciation of the importance of these measures on the part of the lower classes, from whom these statistics are chiefly derived, the semi-annual rate of cases of complicating renal disease varied from 9 to 4.1 per cent. On the other hand, in many instances in which these instructions were strictly enforced severe cases of nephritis, even with uræmia, were encountered. While presenting these facts, the author disclaimed any intention of advocating a discontinuance of these prophylactic measures.

In discussing the throat affections, he said that in the præ-bacteriological era the absence of paralyses and the limited tendency of the process to extend downward in the air passages served to distinguish the diphtheroid angina of scarlatina from that of true diphtheria. While in the early bacteriological examinations the streptococcus was regularly found to be present and the Loeffler bacillus absent in scarlatinal angina, the more general examination of throat exudates, as practiced during the past few years, has established the fact that the bacillus is found in a certain small percentage of cases of scarlatina. But according to the author's opinion, the mere finding of the Lœffler bacillus in the pseudo-membranous exudates of scarlatina does not demonstrate the existence of a double infection; there arises question of the relative number of Loeffler bacilli and streptococci and of the virulence of the former. He agrees with Baumgarten and others that the streptococcus invasion in scarlatinal angina can cause the disappearance of diphtheria bacilli. It is admitted that in the course of scarlatina a true diphtheria infection may be superadded, but this occurs no more frequently than it does in the case of measles, pertussis, etc. These cases of double infection and the relatively more frequent cases with accidental presence of Loeffler bacilli in scarlatina serve to explain the fact that a scarlatina patient may confer a true diphtheritic infection upon another. This phenomenon led several observers to think that there was a certain close ætiological connection between the two diseases. But, as a matter of fact, it is found that epidemics of either disease occur independent of the other.

NEW INSTRUMENT.

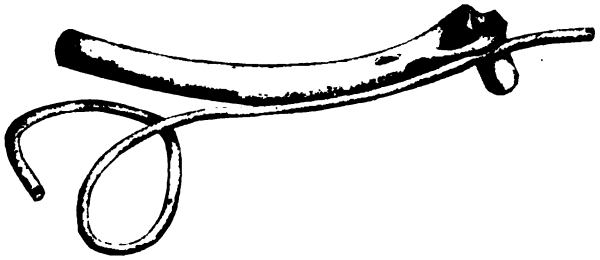
A DEVICE FOR THE IRRIGATION AND DRAINAGE OF PELVIC OR OTHER DEEP ABSCESS CAVITIES.*

By H. G. Wetherill, M.D.

Professor of Gynæcology, University of Denver, Colo.

The successful treatment of pelvic abscesses, when opened and drained through the vaginal vault, depends in a great measure upon the subsequent cleansing and draining of the sac. For this purpose I have lately used the simple device shown, which may not be new; it is new to me, however, and has proved so satisfactory in practice that I venture to ask your attention to it.

It consists of a large calibre drain tube with openings only at its upper end and so constructed as to be self retaining. By the side of this is cemented a small calibre tube; thus is a flushing tube through



which cleansing or antiseptic solutions may be passed into and through the abscess cavity, the drain tube permitting free return of the fluid.

Instead of the T-shaped tube commonly used for this purpose this tube is made self-retaining by making a slit in one of its sides, through which the end of the tube is inverted and drawn out at right angles to its shaft. The cement of the flushing tube holds it in this position.

The flushing tube is but twenty-four inches long and is to be used with a clean glass funnel in its end and not attached to a fountain syringe, which might give too much pressure if raised high, and force the solution into undesired situations.

After evacuation the tube may be introduced and the cavity thor-

*Presented at the meeting of the Western Surgical and Gynæcological Association, January 8, 1898.

oughly washed out and the nurse be instructed to pass through the tube at regular intervals such solutions as it may be desired to use, the drain tube carrying them out through the vagina without soiling that canal, as the tube is long enough to reach beyond the vestibule; the incision having been partly closed about the tubes, and the vagina lightly packed with gauze as usual.

This device saves the surgeon the trouble and the patient the pain and annoyance of frequent changes of packing in the abscess cavity and facilitates its speedy closure.

Of course no flushing device of this kind can be used when the general peritonæal cavity has been opened. The abscess must be sacculated and the cavity in which the tube is placed must be perfectly walled off, if there is doubt about this the irrigation must not be employed till time enough has elapsed for the formation of new and firm adhesions. Then it may be used if the precaution is observed of making only the minimum of pressure by shortening or lowering the funnel end of the tube.

Only non-poisonous and unirritating solutions should be used as a considerable amount of the solution may be retained in the cavity and opportunity offered for ready absorption. The solutions which I have found most satisfactory are ½ per cent. lysol, or 1-10 per cent. of formalin. The interval between the flushings may be from two to twelve or twenty-four hours.

THE

AMERICAN GYNÆCOLOGICAL

AND

OBSTETRICAL JOURNAL.

JUNE, 1898.

URETERAL ANASTOMOSIS.*

By Howard A. Kelly, M.D., Baltimore.

While pelvic surgery has brought relief for many ailments, it has also brought with it at least one group of affections which is practically new, that is to say, surgical injuries to the ureters. Previous to the last decade ureteral fistulæ were only observed as a sequence of severe labors, generally instrumental, with extensive rupture of the cervix, tearing open the parametrium and dividing the ureter, and leaving behind a uretero-cervical or uretero-vaginal fistula. Now-a-days every operator of wide experience can recall cases in which he has injured a ureter, and others in which he has been called upon to repair ureteral fistulæ consequent upon his own operations or upon those of others.

In my own experience I have ligated a ureter twice in the enucleation of fibroid uteri and once in removing a cancerous uterus by the abdomen.

In another case of hysteromyomectomy, I cut the ureter in two and anastomosed it at once into itself, and in one other case the ureter, bared in making an extensive abdominal enucleation for a carcinomatous uterus, sloughed and left a uretero-vaginal fistula.

One of my associates at the Johns Hopkins Hospital had a ureteral fistula following hysterectomy for carcinoma, and in another case he cut half-way through the ureter, sutured the cut at once, and the woman recovered without leakage; the first case came back to the hospital and I anastomosed the ureter into the bladder successfully by the abdomen.

F. von Winckel estimates the frequency of ureteral fistulæ to the

* An address delivered before the Philadelphia Obstetrical Society, April 7, 1898.

number of total extirpations of the uterus as 17 in 774 or 2.2 per cent. A. Martin had two cases of ureteral injuries in 202 total extirpations.

F. B. Robinson reckons an average of 3 ureteral injuries to 100 hysterectomies.

My own average is something under 1 in every 500 abdominal sections for all purposes.

It is important in attempting to estimate the frequency of these accidents to bear in mind that the number of fistulæ actually seen is but an index of a far larger number of cases in which one or both ureters have been clamped or ligated, in which the patient dies and the injury never comes to light. I feel safe in making this estimate as I consider the chances for the recovery of a patient after an operation with a ligated ureter are greatly diminished, and if she does recover the accident may not be known unless the attempt is made to catheterize the ureter.

In the experiments made upon dogs, ligating one ureter, it has been found that the kidney may atrophy and cease its function entirely without loss of life.

In like manner, R. Bastianelli (*Annali di Obst. e di Gyn.*, No. 2, 1896; see Frommel No. X, p. 351) had the hardihood to ligate a ureter, accidentally cut, and drop it, and the patient recovered with an atrophied kidney.

In another instance cited by Tuffier and Levi, the ureteral end was found so distant from the bladder and embedded in adhesions that an anastomosis could not be made, and on account of the feeble condition of the patient nephrectomy was not to be thought of. Under these circumstances the ureter was ligated with a view of causing atrophy of the kidney, but in eight days the urine began to flow again through the fistula.

Ureteral fistulæ arising from surgical causes in this way open either on the vaginal vault or on to the abdomen in some part of the incision which has been made to expose the pelvic organs.

The operations liable to give rise to the formation of a ureteral fistula are:

Vaginal hysterectomy for carcinoma.

Abdominal hysterectomy for carcinoma.

Abdominal hysterectomy for pelvic inflammatory disease, with dense adhesions to the pelvic floor.

Vaginal hysterectomy for pelvic inflammatory disease.

Hysterectomy for fibroid tumors, especially for sub-pelvi-

peritoneal and intraligamentary fibroids displacing one or both ureters.

A suppurative adherent fibroid tumor (Bernays).

The enucleation of broad ligament cysts.

The enucleation of adherent ovarian cysts.

The extirpation of a pyosalpinx.

The removal of a ruptured extra-uterine pregnancy (Shoemaker).

The removal of a lithopedion.

Operations upon cancerous ovaries.

Cystic adenofibroma of the ovary (Tauffer).

The extirpation of a papillomatous ovary (Fullerton).

Porro-Cæsarean operations.

Ureteral injuries occur during these various operations (1) through the ligation of one or both ureters, (2) by clamping them, (3) by puncture of a ureter with a needle carrying a ligature under a bleeding area, (4) by cutting a displaced ureter with a knife, (5) by creating a slough in the wall of the ureter with a cautery-knife or loop, or (6) by tearing off a ureter adhering closely to cyst or a malignant tumor.

Another and comparatively a new way in which a ureteral fistula may be produced, is (7) by baring the ureter and injuring its external vascular sheath (Waldeyer's), resulting in the formation of a slough with a fistula, and this, I think, will prove to be the commoner injury in the future.

While, as I have said, with the advent of the more radical methods of pelvic surgery a fresh crop of ureteral injuries has come to light, I believe that the closer attention which has been drawn to these injuries has resulted in more careful operating, and that we will find, in skilful hands at least, from now on that the ureters will be less frequently involved in the operation, and when they are injured the methods of immediate repair at our command will be employed thus greatly reducing the number of post-operative fistulæ observed. My own statistics, through the adoption of certain precautions dwelt upon below, show an entire disappearance of ureteral fistulæ due to the unforseen involvement of a ureter in a ligature, or due to the unexpected cutting of a ureter, and I am sure that the experience of every active surgeon is similar.

In order to avoid these injuries surgeons must bear in mind several important points in the technic of the various operations cited above.

In the first place, in vaginal hysterectomy and in abdominal hysterectomy for carcinoma, I would insist upon the preliminary insertion of bougies into the ureters marking them out with the utmost distinctness, and making it impossible to injure them unwittingly.

With the use of the bougies the ureters are constantly within the touch of the fingers even when separated by a considerable interval of cellular tissue, the surgeon can then work fearlessly and rapidly in applying his ligatures, passing needle and carrier right down close to the ureter through a mass of tissue if desired, and the ureters can be dissected out for a considerable extent, from posterior to anterior pelvis, without injury.

Another important step in the technic of the vaginal enucleation of the uterus is the detachment of the bladder from the upper vagina and the anterior uterus and lifting it up like a flap with its ureters, away from the field of operation, as insisted upon by Paul Segond.

In abdominal operations in the wide enucleation of the carcinomatous uterus, removing glands and broad ligaments, the preliminary catheterization marking the ureters is almost a *sine qua non*, without this procedure the operation is greatly lengthened by the extreme care necessary to discover, dissect out, and avoid the ureters.

In all intraligamentary tumors the ureters must be borne prominently in mind, and, if possible, the tumor must be enucleated by opening the broad ligament near the uterus and then rolling the peritoneal capsule and the cellular investment over toward the outer side sticking close to the tumor proper; if the tumor is cystic this will be made easier by collapsing the cyst first.

When one of the ureters is displaced on top of a fibroid tumor it will not be necessary to deal with this complication directly if the plan is followed of beginning the enucleation on the opposite side and then cutting down and across the uterus, and rolling it up and out, and shelling out the sub-pelvi-peritoneal tumors from below upward; by doing this their cellular covering, and with it the ureter, is easily left behind and the operator may even not know that the ureteral displacement existed.

Several times when I have been forced to perform an abdominal hysterectomy without ureteral bougies I have located the ureter after liberating the bladder from the uterus and draining it toward the opposite side, by catching up the cellular tissue at the base of the broad ligament at a point just in front of the uterine artery, and pal-

pating it between the thumb and the index-finger until I plainly felt the ureter, from this point it may then be traced forward to its vesical terminus. If it cannot be felt at once in the broad ligament it may be found first under the bladder and so traced back. The sensation conveyed by the form and consistency of the cord and its direction are quite characteristic.

The invariable rule should be made that at the close of every difficult abdominal enucleation, where the complications have been about the pelvic floor, the ureters must both be inspected and their integrity assured. This is done by seeking the ureter out at the pelvic brim under the ovarian vessels, and if there is much subperitoneal fat obscuring the ureter, slitting open the peritoneum to find them, I frequently, without inspection by touch alone, pick up the ureter at the brim and isolate it by allowing the spermatic vessels to slip between my fingers. When lifted in this way the ureter forms a prominent ridge running down into the pelvis, with a distinct, artificially formed, meso-ureter behind it. If it is then grasped at a lower point and lifted up again it may, in this way, be traced into the anterior pelvis. It may also be traced by lifting it up and pulling on it at a point just below the brim and feeling the transmitted movement in front.

Several times when there has been a good deal of tying done in the pelvis and the ureter appeared to enter a mass of ligatures and I could not be sure whether it was included in one of them or not, I have solved the difficulty by making a little longitudinal slit in the ureter near the pelvic brim and running a ureteral catheter down into the bladder. The slit was closed with two or three fine silk sutures and no harm resulted. In one instance the ureter was actually found included in the ligature embracing a large vessel, the ligature was cut and a fresh one applied to the vessels alone, and the ureter was apparently uninjured as the convalescence was normal. To avoid injuring a ureter, the cardinal rule is, never to apply mass ligatures lateral to the cervix; if the whereabouts of the ureter is not known the vessels must be tied singly. Furthermore, ligatures must never be applied at the bases of the broad ligaments in such a way as to drag the tissues in one direction or in the other for fear of making a kink in the ureter, and so obstructing it. In doing a hysterectomy for a fibroid uterus by my plan of making a continuous transverse incision, it is best, on cutting across the cervix, to cut upwards on the far side just before completing the division so as to leave a thin shell of the uterine tissue behind, in this way ex-

posing the uterine vessels at a higher level quite out of reach of a ureter.

The ureter may be mistaken upon inspection or on palpating the lateral pelvic wall for the obturator nerve; it is also liable to be confused with the white, flat cord of the obliterated hypogastric artery. It looks most of all like a large vein from which it may be distinguished by squeezing a little blood out of the vein and noting its direction across the course of the ureter as well as by looking into its mouth and discovering the orifices of little tributary veins.

When a ureter is injured the best plan of procedure is to anastomose it at some point (ureterostomy); such an anastomosis may be made in one of the following ways:

Onto the abdominal wall—simple ureterostomy.

By joining the divided ends—uretero-ureterostomy.

By switching the cut ureter into its fellow of the opposite side—crossed ureterostomy.

By switching the upper end directly into the bladder—ureterocystostomy.

By turning it into the rectum—ureteroproctostomy, or into the colon—ureterocolostomy, or into the vagina—ureterokolpostomy.

Simple ureterostomy, uretero-ureterostomy, ureterocystostomy are the anastomotic procedures employed when a ureter is injured during an operation.

Ureteroproctostomy, and a crossed uretero-ureterostomy are deliberate procedures to be undertaken at a later date and ureterokolpostomy has hitherto been rather the result of the accidental formation of a fistula than a method of deliberate choice.

There are two factors to be considered in relation to ureterostomy, the first is what to do with a ureter divided in the course of an operation, and the second is how to heal a ureteral fistula already made.

When the ureter is divided in an operation, the general rule should be to anastomose it at once, either to its lower divided end, or into the bladder. When the division is made in the anterior part of the pelvis, it would best be anastomosed into the bladder (ureterocystostomy) by making the connection at the lower outer angle of the bladder where that organ is attached in front of the broad ligament at a point which I have named the vesical cornu. By doing this the ureter is less liable to injury than when the anastomosis is made at some indifferent point on the vault of the bladder and the

ureter describes a free trajectory across the pelvis, putting it in a position liable to constant pressure from the viscera.

Having opened the bladder and attached the ureter at the point indicated it is now easy to draw the peritoneum together over both bladder and ureter making it extraperitoneal.

If the ureter is cut in the posterior part of the pelvis, so as to leave a long anterior end which can be lifted up and handled one of of two procedures will be available, either an end-to-end anastomosis cut straight or with oblique ends as recommended and successfully practised by Bovee, or an end-to-side anastomosis as recommended by Van Hook, and successfully put into practice by several surgeons. I think the end-to-side anastomosis is better adapted to cases in which the ureter has been dilated by pressure.

It is always worth while taking careful note of the condition of the kidney before taking the trouble to anastomose the ureter, as it has happened in several cases that there has been an entire cessation of the function of the kidney on the side of the damaged ureter, as we might expect from the displacement, compression, or adhesions involving the ureter. One of these cases was observed by Drs. Anna Fullerton and C. P. Noble, and another occurred in the practice of Karl Schroeder, and was carefully observed by J. Veit and Karl Ruge, and another was in Veit's own practice in association with a pyosalpinx.

L. N. Warkek, in the course of an ovariotomy, cut off 9 cm. of the ureter which he then brought out into the wound, as the corresponding kidney could not be found. Atrophy of the kidney had clearly been brought about by compression, as there was never any escape of fluid from it.

When the ureter has been cut off so short that it cannot be anastomosed into the bladder, and when there is a stricture below, or when any considerable portion of the ureter has been sacrificed, I have proposed to anastomose it into its fellow by drawing it across under the peritoneum above or below the pelvic brim, but I find that in this I have been anticipated by E. Casati, A. Boari (Atti del l'Acad. di Scienze med. e nat. in Ferrara, 1894), and Monaro (*Beitr. z. klin. Chir.*, Bd. XV., H. 3), as well as by Wiesinger (*Münch. med. Woch.*, Bd. XLIII., p. 1120); see Frommel, Vol. X., p. 353.

Fowler's method of anastomosing the ureter into the rectum, with an improved technique for the protection of the orifice, is well worth considering in this connection, especially if the injury happens to be on the left side.

When the injury has not been noted at the time of operation, and an abdominal or a vaginal fistula forms, a variety of procedures come up for consideration in determining what to do; in the first place it is best to wait two or three months or sometimes even longer, until all surrounding inflammation and cellular thickening have subsided.

The rule should be made never to operate in the presence of an infection of the urinary tract on the fistulous side.

When a uretero-vaginal fistula exists and the operator has to do with the sequel of one of the various abdominal operations mentioned above in the list, one of the following courses may be resorted to, either (1) to direct the urine into the bladder by a vaginal operation, of which there are a number, or (2) to open the abdomen and free the end and turn it into the bladder, or (3) to operate through the superior strait by an extraperitoneal route and so switch the ureter into the bladder, or (4) to open the bladder through the superior strait and cut down on the ureter and suture it into the bladder (Mackenrodt), or (5) to extirpate the kidney on the affected side. The extirpation of the kidney to relieve the disagreeable effects of a uretral fistula should be reserved for cases in which there is a coincident pyelitis or pyelonephritis of that side, and in the absence of such an indication this radical procedure must henceforth be regarded as bad surgery. The immediate extirpation of the kidney at the time the ureter is injured is liable to be productive of an acute nephritis of the remaining kidney and is far more dangerous than a nephrectomy done at a later date.

When the operator has to deal with a ureteral fistula already formed and opening into the vagina, one of several procedures may prove serviceable in turning the urine again into its vesical channel. This may be done by one of several general plans, either that of Simon, which consists in the formation of a vesico-vaginal fistula at the nearest possible point to the ureteral opening and then uniting the vagina over this area on all sides so as to include the two fistulæ. The effect of this is to sequester a narrow strip at the vaginal vault which acts as a carrier of the urine from ureter to bladder; the operation is, therefore, a sort of miniature colpocleisis.

McArthur has succeeded in dissecting out the end of the ureter and simply turning it into the bladder, and if this can be done it is the best plan of all.

Mackenrodt and Duehrssen have skilfully opened the bladder close to the ureteral orifice and slit the ureter so as to expose its mucous lining and united the two mucosæ of the ureter and the

bladder, and then closed the vaginal wound directly over the opposed vesical and ureteral orifices. This procedure is called by Mackenrodt entropionizing.

A further alternative for these operations is the formation of a large vesico-vaginal fistula up at the vault of the vagina, followed by a circular denudation of the vagina below it, the vagina is then closed by numerous sutures uniting posterior and anterior walls. This operation is a colpocleisis, and converts the upper part of the vagina into a secondary pouch in indirect communication with the bladder through the fistulous opening. Unfortunately, the results of such a procedure are so serious that it has been universally condemned, and, as far as I know, no case has lived long after its performance. The stagnation of the urine in the vaginal pocket produces cystitis, pyelonephritis, and death. H. Fritsch, in a recent monograph, condemns colpocleisis unqualifiedly.

The vaginal operation upon a uretero-vaginal fistula may be rendered exceedingly difficult or impracticable by the extreme narrowness of the vaginal orifice, or by the amouut of scar tissue at the vaginal vault, although the latter difficulty may be done away with in part by excision of the scar (Duehrssen).

Another difficulty and objection to the vaginal mode of operating, especially in the cases where there is much scar tissue, depends upon the fact that the ureteral orifice is often extremely contracted, causing the formation of a hydro-ureter and hydronephrosis, and the end of the ureter itself may lie, not in the vault of the vagina as supposed, but some distance from the vault.

As Mackenrodt has pointed out, the ureter itself is more likely to be accessible at the vaginal vault when it has been injured in the course of a vaginal operation, and on the other hand the ureter is more liable to be at a distance from the vaginal vault when the fistula is consecutive to an abdominal operation.

One can sometimes test the accessibility of the ureter by the facility by which a sound can be introduced into it and pushed on up toward the kidney. If there is a long fine canal surrounded by scar tissue this cannot be done.

I feel it necessary, however, at this juncture, to utter an urgent warning against any reckless catheterizing of a fistulous ureter; the catheterization should only be attempted after as thorough a cleansing as possible of the vaginal vault and with a sterilized catheter. When a hydro-ureter exists the resistance to infection is reduced to a minimum, and once introduced we will have henceforth to deal no

longer with the simple results of an obstruction, but with a ureteritis, a pyelitis, and a pyelonephritis as well. I feel the necessity of dwelling upon this danger all the more keenly as I lost one of my own cases in this way.

In the following case in which I had to do with ureterovaginal fistula of both sides, I adopted a novel plan of procedure, which has proved so successful, that I think it worth recording.

The patient, fifty-three years of age, had a carcinoma of the neck of the womb for which I performed a panhysterectomy, opening the abdomen and removing with the uterus all the pelvic cellular tissue between the pelvic walls and the cervix, and much of the paravaginal tissue, together with the pelvic glands. Before doing this, renal catheters were put into the right and left ureters respectively and left there throughout the operation.

In order to make this extensive dissection of the cellular tissue both ureters were dissected out free from all pelvic connections from the posterior part of the pelvis to the bladder, being bared to an extent of 6 cm. in their course. A large, hard gland, closely attached to the external iliac vein, was dissected out of the bifurcation of the common iliac artery; the detachment of the gland from the vein was quite difficult and it presented a distinct facet on the side of contact. Two or three more glands were also removed anteriorly to this extending along the pelvic brim toward the inguinal glands. On the right side a similarly enlarged gland was found in the same position and removed with another gland lying posterior to it. After this thorough enucleation no trace of any cancerous infiltration or metastases could be discovered in the soft tissues. From the time of the operation the patient suffered with incontinence of urine, but by the eighth day she began to have some control over her bladder and in sixteen days the examination showed that there was a ureteral fistula in the midst of the scar tissue at the vaginal vault.

Three months after the operation I attempted to cure the ureteral fistula by switching the ureter into the bladder by the abdominal route. As the fistula lay so near the median line that I could not tell from which side the urine came I catheterized the left ureter, which I supposed from the circumstances of the operation was the injured one, and found that my catheter stopped at the base of the broad ligament, at the point at which the catheter always stops when the ureter is cut off.

The abdomen was then opened and the left ureter sought out on the pelvic floor and traced up to the base of the broad ligament where it

was rigidly held embedded in scar tissue. It was cut off at this point to anastomose it into the bladder, but on severing it, I found that the ureter had not been divided at all, but was simply stenosed by the contracting scar tissue, and narrowed down to a lumen of about 1 to 1.5 mm. in diameter. It was clear, therefore, that I had cut the ureter in its continuity and the right ureter was the one injured during the hysterectomy.

As the patient was feeble and could not stand much operating, there was nothing left for me to do but to anastomose the left ureter



Fig. 1. Showing the relation of the bladder above to the underlying vagina. The fistulous orifices of both ureters are seen in the vaginal vault; below them is seen the semicircular denudation extending across the vagina from side to side. The bladder is cut open at the vault of the vagina at a b from side to side, the ends of the incision terminating at the vaginal denudation.

into the bladder at the nearest point and to leave the fistulous ureter for another operation. This was done and the peritoneum was united on all sides over the ureter and up onto the bladder, making the operation extraperitoneal. The patient was then put to bed, but through an unfortunate oversight a drainage catheter was not put into the bladder which became distended and forced the urine out through the wound, causing urinary infiltration and infection of the surrounding tissues, accompanied by a decided febrile reaction. I relieved this by incising the left lateral vault of the vagina and freely

opening up the base of the broad ligament, giving exit to pus, blood, and urine. Although, for a time, a little urine escaped by the bladder this soon ceased and almost all urine, from both right and left sides, passed out through the vaginal vault, and she had therefore, a double, that is, a right and a left ureteral fistula.

For the relief of this condition, she entered my private hospital, April 17, 1897. On April 27th I did the following operation, resulting in immediate and perfect relief of the condition, and she was able about a month later to leave my care and has since remained in good health without any leakage of urine and with perfect control over the bladder function.

Vaginal operation, April 27, 1897.

Vaginal outlet about 3 cm. in diameter; vagina smooth-walled, about 8 mm. deep, terminating in a cul-de-sac, drawn up on either side into pockets. Between the pockets a fine, white line about 2 mm. broad, distinguishable with difficulty, representing the site of enucleation of uterus. The bladder during the past twenty-four hours has secreted 350 c.c. of urine from anastomosed left ureter.

The operation undertaken was to make a semilunar denudation two-thirds way round the vaginal wall posteriorly, beginning and ending at the lines separating the anterior from the lateral vaginal walls. In this way a denudation 6 mm. in breadth was made from side to side through tissue constantly and freely oozing.

The sutures of fine silk were then passed, about three to the cm., from one side to the other. The bladder was then opened about 2 cm. below the vault of the vagina by plunging in a right-angled knife using a sound in the bladder as a guide. It had been noticed before the operation that the entire anterior vaginal wall lay in relation to the bladder. The opening into the bladder was made transverse, 3 cm. in length, the thickness of the septum was about 12 mm. The bladder-walls bled freely and to check this bleeding the mucous lining, posteriorly, was drawn over and united to the vaginal mucosa by about seven catgut-sutures. The lines of the incision were now carried down toward the lines of denudation on either side so as to make a complete ring of denudation above which lay 2 cm. of vaginal tissue on the posterior and 2 cm. on the anterior wall, and into which opened the ureteral orifices.

The operation was now completed by carrying the sutures which had been passed on the posterior vaginal wall through the denudation on the anterior wall and into which opened the ureteral orifices at the right and left apices.

The operation was now completed by carrying the sutures which had been passed on the posterior vaginal wall through the posterior margin of the incised bladder. This closed the vagina transversely, leaving a cul-de-sac about 5 cm. in depth.

The urine which now escaped must necessarily pass out at the vaginal vault, directly into the bladder, and out through the urethra.

The line of union was made by bringing the anterior against the posterior vaginal wall for about 1½ cm. at either side, but the middle part was united so as to bring the vesicovaginal septum in apposition to the posterior vaginal wall.

The sutures were removed on the eighth day and the union found



Fig. 2. After cutting open the bladder the upper edge of the incision a. is stitched uniting vesical to vaginal mucosa at a., while the lower edge b. is united to the vaginal denudation at c. (see Fig. 1 also), in this way intercalating the piece of the vagina, including the ureteral orifices into the floor of the bladder without forming a cul-de-sac.

perfect; there was no leakage. Complete control over bladder existed from the first. When discharged the urine contained but little pus and the general condition was greatly improved.

May 10, 1897. Removed one catgut-suture with calculus from bladder through my vesical speculum through the urethra.

The operation just described differs from a colpocleisis in that no vesico-vaginal fistula was formed and no secondary pocket was left behind for the accumulation and decomposition of the urine, on the

other hand, the bladder was split open from side to side and pulled apart, and a strip of vaginal mucosa at the vault of the vagina, simply set into the interval between the separated halves of the bladder. On looking into the bladder through a cystoscope one would be able to see a continuous surface on all sides without any spur or pocket, while the ureters would be seen opening into the posterior vesical wall.

In the suprapubic operation we fortunately have an alternative for those cases in which the vaginal operation is impracticable as well as for those in which a uretero-abdominal fistula exists.

When the ureter is brought out on the surface of the abdomen, Rydygier has busied himself with the construction of a channel leading down into the summit of the bladder through a fistulous orifice. This has been done by Buschbeck, and Veit has successfully carried out an analogous procedure immediately after cutting the ureter.

The other alternatives, when there is a uretero-abdominal fistula, are to switch the ureter into its fellow as noted above, or best of all, to anastomose it into the bladder at the nearest point, and this may be done either by an extra- or an intraperitoneal method, or again, the abdomen may be opened and the ureter turned into the bladder and then the whole field of the operation may be made extraperitoneal by bringing together the peritoneum over the ureter and the vesical wound.

It is an important part of the technique of this operation to expose the lower end of the ureter and to divide it as far forward as possible; if it enters superficial tissue and is constricted, it should be cut off just behind the stricture. Sometimes the anastomosis is so easily effected that a considerable portion of the lax end of the ureter has been left in the bladder after slitting it up to insure a permanently large lumen.

In other cases, however, the ureter is so short when it is cut that it is only brought forward to the bladder with extreme difficulty, and if attached to the bladder there is evidently imminent danger of its pulling loose from its moorings. This difficulty may sometimes be obviated by one of several procedures, in the first place the operator will best secure the advantage of the distensibility of the elastic ureter by postponing the abdominal operation until the disappearance of all peri-ureteritis, in which the ureter is often embedded and fixed for some weeks after the original operation.

In the second place, when the ureter cannot be brought to meet the bladder, the bladder may easily be freed from its surrounding

cellular attachments and drawn back toward the posterior part of the pelvis and so made to meet the shortened ureter, in this way securing the advantage of from 3 to 5 cm. This important procedure was first employed by myself in a ureterocystostomy, and again by Baldy, as well as by Professor O. Witzel of Bonn.

Bovee has shown also in the third place that the ureter may be lengthened by loosening the kidney and artificially displacing it

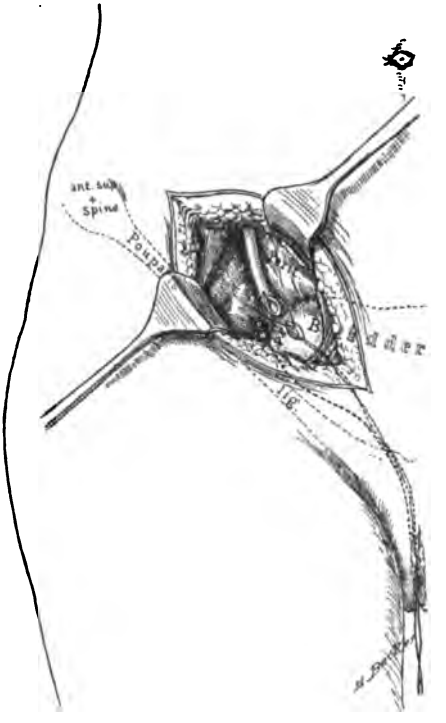


Fig. 3. Anastomosing the right ureter into the bladder by the extraperitoneal route. The unopened peritoneum lies to the median side; the ureter is slit up on its upper surface to enlarge the lumen and is then drawn by the traction threads into the opening made in the bladder at the nearest point.

downward; he has done this with success upon animals, but it remains to be tried upon the human being.

The ideal plan of ureterocystostomy is the extraperitoneal method performed without opening the peritoneum at all. This has been suggested by Fritsch in a recent monograph, and carried out, I believe, for the first time, in one of my own cases which I herewith report. The operation was surgically and technically a

success in that the ureter healed in position in the bladder, but it was a failure from the fact that the patient died, probably of a pyelonephritis.

The fistula was in the right vaginal vault and discharged its urine through a minute orifice. A sound entered about 12 cm., but could not be introduced a second time, the position of the lower end of the ureter was therefore, uncertain. Following this examination she had a chill and fever and pain in the right loin.

On the 26th of January, 1898, I made an incision 15 cm. long from a point 2 cm. inside the right anterior superior spine of the ilium and ending near the spine of the pubis, exposing the deep epigastric vessels and the round ligament.

The peritoneum was opened inadvertently and at once closed, and then dissected loose from the right pelvic wall down to the large, thick, white ureter about 12 mm. in diameter, which was readily found and freed from its connections on the pelvic floor, and cut well forward where it began to be strictured. Both superior and middle vesical arteries were tied in order to reach the anterior end of the ureter. The uterine artery had already been obliterated in removing the uterus and the ovaries for pelvic inflammatory disease at another clinic. The bladder was then freed from its peritoneal attachments on the right side and so easily brought over the end of the ureter.

When the ureter was divided a milky fluid began to flow from the end and continued in large quantity in spite of every effort to empty both ureter and renal pelvis, as a consequence of this there was an extensive infection of the wound. The peritoneum at the pelvic floor was so adherent and thin that it tore, making an opening about 3 cm. long, which could not be closed without further tearing the delicate tissue. The ureter was then split open on the dorsum and anastomosed into the bladder, uniting mucosa to mucosa and ureteral wall to bladder wall.

On account of the widespread contamination of the tissues I determined to drain into the vagina, but unfortunately, in introducing the instrument to force the hole in the lateral vaginal wall I passed it through the capacious urethra and perforated the bladder, and inserted the gauze drain in this way, an accident which was not discovered until after the close of the operation. Another vaginal drain on the median side of the ureter was meant to protect the peritoneum from infection. The skin wound was closed. After removal of the gauze, inadvertently put in the bladder, a drainage catheter was

inserted and all the urine came through this, and there was at no time any leakage per vaginam.

She died in six days without any tympany but constant nausea and having had a pulse which could scarcely be counted for several days.

In spite of my unhappy experience in this case I am convinced that the extraperitoneal plan is the best and I expect to follow it in future ureterocystostomies. If the urinary tract was found infected on another occasion I would either give free drainage and wait for an improvement, or extirpate the kidney. I would not again attempt to anastomose an infected ureter.

STERILITY.*

By W. Gill Wylie, M.D., New York.

The treatment of sterility is probably as old as the history of medicine. For practical purposes, the causes of sterility may be considered as those due to disease of the adnexa and those due to disease of the endometrium, and I will confine myself to the treatment of sterility due to the latter cause.

Any disease which affects the endometrium or which changes the character of its secretion is liable to produce sterility. When a woman comes to us saying that she has been married several years but has not borne children, it will often happen that there will be no marked uterine disease. There is generally present a condition which has been termed "anteflexion of the uterus" and which is nearly always associated with dysmenorrhœa. For many years this slight anteflexion was looked upon as the cause of the trouble; and, therefore, in order to cure the dysmenorrhœa it was the custom to straighten the uterus. All kinds of attempts were made to do this by inserting various forms of pessaries, etc. Mackintosh of Edinburgh was the first one to attempt to relieve the dysmenorrhœa by dilating the uterine canal, and he considered the trouble to be due to stricture. For this purpose he devised an instrument, which was made in different sizes, similar to a male sound. Then Simpson of Edinburgh and Sims of New York undertook to increase the size of

* Read before the Woman's Hospital Society, March 15, 1898.

the canal, dividing with a knife, and keeping the canal open, and twenty years ago this was a recognized practice, although it was considered dangerous. Asepsis was not understood or carried out at that time and many women developed peritonitis and lost their lives. For this reason this method of treatment fell into disuse. Then Dr. John Ball of Brooklyn and Elanger of Germany devised instruments for divulsing the canal. About that time I took up the study and devoted much time and thought to it. As a result I taught fifteen years ago what I teach to-day., *i.e.*, that the trouble is not so much due to the flexion as to the chronic endometritis which always exists in these cases.

To thoroughly understand the condition it is necessary to go back to the development of the woman, and it will then be found that it is a question of imperfect development. Young girls between the ages of 14 and 16 are allowed to develop their brain at the expense of their genital organs. These are the last to develop and, not being essential to life, will not develop when the brain is over-developed, unless there is a surplus of energy. I take the view that leucorrhœa in young girls is due to the fact that the uterus is undeveloped and an easy prey to any catarrhal disease which attacks it and causes the glands to secrete an abnormal amount of mucus. Granular erosion and ulceration of the cervix may be present, the latter is small, and the os internum is found to be very sensitive when the sound is passed. There is generally a slight degree of anteflexion and an irritable condition of the endometrium similar to that found in granular lids and chronic sore throat seen in ill-developed young people. The anteflexion which exists is due to the fact that the uterus, which is always flexed in early life, has never straightened up, and the real cause of the whole trouble—the flexion, the dysmenorrhœa, and later, the sterility—is imperfect development.

It happened that I had been trained in general surgery and I knew that the proper way to treat an old discharging sinus is to remove the foreign body at the bottom of it (if there is any), scrape it out, and drain it. Therefore, I conceived the idea of treating cases of endometritis in this way, excluding, of course, those in which there is disease of the adnexa. I recognized the fact that the uterine cavity could not be safely burned or cauterized because it is filled with deep-seated glands and follicles which, if this were attempted, would be closed up and result in occluded glands and so-called cicatricial tissue. I also recognized the fact that when the os internum is touched there is a contraction due to the existence of a sphincter-

like muscle, and that in order to relieve the symptoms this must be dilated and kept open.

When I first tried this plan of treatment at Bellevue Hospital about fifteen years ago, I made use of all sorts of material, from lampwick to bundles of wire, with which to keep the canal open and drain the uterus. I soon discovered that it was impossible to drain the uterus, with its contractile sphincter at the internal os, with any soft material like gauze for the reason that the mucus would fill up the holes in the material and because the internal os would contract upon and compress it, and thus prevent drainage. I did not want to employ the old glass stem (although there is a certain amount of drainage which takes place around it) because it is apt to be forced out by contraction. I also recognize the danger of using tents, for if we stop up the uterine canal with any hard, solid substance, drainage is prevented, the secretion fills up the uterine cavity above the obstruction, and produces contractions which will force out the obstruction; or, the secretion will be forced back through the tubes and cause peritonitis. It is not more than two or three years ago since an eminent young gynæcologist advocated the use of tents in dilating the uterus, and, when I remonstrated with him, he said that he used tupelo- and laminaria- but never sponge-tents, and, therefore, considered that there was no danger of causing infection. Now, to my mind, there is no more risk of causing infection with a sponge-tent than with any other kind, for a sponge-tent can be made as clean as any, but all tents are liable to cause trouble because they plug up the cervix and prevent the escape of secretion. After experimenting with various materials I have found that it is absolutely necessary to use a hard substance for uterine drainage and that this substance must be made hollow in the form of a tube. My tubes are made of hard rubber and have a deep groove or fenester down the side in order to facilitate drainage. These tubes also serve the purpose of keeping the canal open. It is true, as some have objected, that some folds of the mucous membrane may get caught in the fenester, but this will do no harm.

Five or six years ago when I opposed gauze drainage I was looked upon as a heretic. I have not used it for draining the uterus for fifteen years, and I am glad to say that it is now rapidly becoming obsolete.

In a typical case of dysmenorrhœa and sterility, the os internum is hypersensitive and there is a creamy, yellow, or thin, acrid discharge from the uterus instead of the normal secretion which re-

sembles the white of an egg. In such a case the best thing to do is to divulse the canal thoroughly, curette the uterus, and insert a uterine drainage-tube. The importance of curetting cannot be overestimated. Of late years the value of curetting in cases of adenoid growths of the pharynx has become generally recognized, just as curetting of the uterine cavity is considered indispensable in the treatment of chronic endometritis. Since I have employed my latest method of leaving in a drainage-tube several weeks, in cases of sterility, my success has been really marvelous. I can recall twelve cases, the patients being women between the ages of 23 and 39, treated by this method during the last eighteen months, and each has had a child, or will have, before next October.

The technic I employ is as follows: First of all, if there is constipation, or if the general condition is bad, this must be corrected. The patient is then as carefully prepared for operationas if a hysterectomy were to be done, so far as cleanliness and the condition of the alimentary canal are concerned. The best time for the operation is three days after up to ten days before menstruation. The patient is put under ether and, while she is lying upon her back, a careful bimanual examination of the pelvis is made in order to exclude any disease of the adnexa. The patient is then placed in Sims' position. After disinfection of the vaginal canal, my dilator is introduced and the canal divulsed until the blades of the dilator are separated, a quarter to an inch, or a little more, which is determined by watching the space between the blades just at the os externum. When this space is large enough to admit an ordinary lead-pencil the blades of the dilator will be separated to the proper extent. The dilator devised by the late Dr. Goodell has attached to the handle a scale upon which the separation of the blades is supposed to be marked, but, in reality, it is very misleading. Care must be taken not to stretch the os too much, otherwise the uterine wall will be torn. It is also necessary to exercise care that the dilator is passed well up through the internal os. If this precaution is not taken only that part of the cervix below the os will be divulsed and nothing will be accomplished. In some cases it will be found impossible to dilate a very small uterus at one sitting without doing violence to the whole uterine structure. I employ considerable pressure—probably 150 or 200 pounds—with my hands, but I never use an instrument with a screw, because the amount of force employed cannot be determined. After divulsion has been thoroughly accomplished, I curette the uterus with a steel Sims' cutette. The little wire affair called a curette is

useless. A good curette should be blunt at the end and have no cutting edge. Polypi, both mucous and fibroid, are often a complication of chronic endometritis. If any be present they can be removed by a strong curette or by forceps, which I have devised for the purpose. After the curetting an application of carbolic acid may be made to the uterine cavity for the purpose of disinfecting any blood and mucus which may remain there. This, however, is not indispensable; I often omit it and do not advise it. If it is employed, only the very best carbolic acid, such as Calvert's No. 1, should be used, and but very little of it. Then a uterine drainage-tube one and a half to two inches long should be inserted, and an Albert Smith retroversion pessary introduced into the vagina to hold the cervix back in the cul-de-sac. Thus, any contraction of the uterus will force the tube in and prevent it being expelled from the uterus. The tube is also made with a small bulb on the end in order to prevent it from slipping out. The patient is kept in bed for a week. No douches are given, except the one which is given previous to the operation, but the vulva is protected by a pad, which is changed frequently. At the end of a week the mucous membrane will have healed. The tube is removed and the patient is allowed to get up and move about her room. At the end of another week she is allowed to go home. As a rule, nothing more is necessary. The dysmenorrhœa is relieved and the woman generally becomes pregnant within six months. If the dysmenorrhœa returns after one or two painless periods, the treatment may be repeated and in very rare cases I have employed it a third time, inserting a smaller tube and leaving it in the uterus for one or two months. The patient must be cautioned to take an occasional douche, and to refrain from sexual intercourse, and bicycle- and horseback-riding, while wearing the tube. It should also be ascertained whether she can wear the tube without trouble before she is permitted to go to her home.

A straight dilator should never be used for divulsing the uterus, for it will be checked at the internal os if there is any flexion, and it will pass directly through the uterine wall if sufficient force be employed. I know of an instance in which a straight intra-uterine electrode was forced through the uterine wall by an eminent gynæcologist, who came here from a neighboring city to show us how to treat these cases with the electrocautery. The patient speedily developed peritonitis and died. Autopsy showed a perforation of the wall of the uterus at the internal os, and of an intestine above. This would not have happened had the instrument been curved.

FOUR CASES OF ABSCESS OF THE UTERUS TREATED BY INCISION, CURETTEMENT, STERILIZATION WITH CARBOLIC ACID, AND DRAINAGE.

By Geo. H. Noble, M.D., Atlanta, Ga.

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The ready manner in which the peritoneum takes care of abscess pockets and pus-covered surfaces (so-called pyogenic membrane) when properly cleansed and drained, is a familiar observation to the abdominal surgeon—notably in deep pelvic surgery. This is true when the external or peritoneal surface of the uterus is implicated.

If then, this organ is not necessarily sacrificed when superficially involved, should it be excised in selected cases when a thin wall or septum of tissue between the pus and pelvic cavity constitutes the only difference? This is a question that presented itself when I was unexpectedly confronted with a case of this kind. It seemed to me that such purulent collections, when converted into a condition similar to pelvic abscess, should meet with the same results. Therefore, the treatment of abscess of the uterus upon the fixed or established principles applied to other parts of the body was employed in the instances here presented, making exceptions to nothing but the character and extent of the inflammation affecting the uterus.

They occurred in my hospital practice within the last two years and will be briefly reported, the object being to call your attention to the subject.

1. The first case was of puerperal origin, the operation occurring at the end of the second week. There was a pus-tube and abscess of ovary in the left side. The appendages on the right side were normal. After separating the adhesions, which were rather extensive for unilateral disease, an abscess of the fundus uteri, about the size of a small lemon, was discovered. It was incised, curetted, and cauterized with carbolic acid. The cavity extended from the median line to the stump of the appendages on the left, which was turned into it and fastened with sutures to prevent the formation of a dead space. A glass drain was dropped into Douglass' pouch after flushing the abdominal cavity.

This woman made an uneventful recovery. The previously high temperature (104⅘° F.) and rapid pulse showed marked improvement from the time of the operation. She has been well two years without any pelvic disturbance.

2. The second case was also operated upon at the end of the second week after confinement. The appendages were normal, excepting a marked injection. An abscess the size of an English walnut was situated upon the posterior uterine surface at the fundus, with a smaller one, about half its size, a little below and to the left.

The appendages being free from septic inflammation, an attempt was made to save the uterus by incision, curettement, and swabbing of the abscesses with carbolic acid and glass drainage-tube. (In this way I hoped to avoid a more or less prolonged operation.) It became necessary, however, to pass a mattress suture through the outer wall of the larger abscess on either side of the incision, then out through the uterine wall at the margin of the indurated area, for the purpose of depressing the outer abscess walls to prevent the formation of a dead space. In this way a little time was lost, but it was trifling when compared with the time consumed in extirpation of the uterus. Though she was anemic and very septic (pulse 120, temperature 103⅘° F.) at the time of the operation, she made a very satisfactory recovery. The drainage-tube was removed in thirty-six hours.

3. The third case followed an abortion, and was operated upon the eighteenth day thereafter. The appendages were in good condition and did not require removal. The uterus was indurated on its posterior surface. Other parts of the organ were soft and more or less relaxed, but not involved in the inflammation. The indurated surface was punctured over the points of the greatest elevation, and two deeper-seated abscesses were in this way discovered. The larger one, about the size of a hickory-nut, was situated in the median line near the fundus. The other was located on the right side and a little below it. They were incised, curetted, and cauterized with carbolic acid, and drained with glass drain in Douglass' pouch.

This woman was in a better condition than either of the other cases, and had not suffered much from septic absorption. The operation would not have been done but for the fact that thorough cleansing of the uterus gave no relief, and that the induration on the posterior wall of the uterus caused a suspicion of abscess. Her recovery was prompt and satisfactory.

4. The fourth case occurred in my service last July. There was

a pyosalpynx and abscess of the ovary on the left side, with very extensive exudate. The uterus and right side of the pelvis was free. The abscess was a little less than an English walnut in size, and situated slightly to the right of the median line on the posterior portion of the fundus uteri. It was incised, curetted, cauterized with carbolic acid, and drain dropped in Douglass' pouch. Drainage removed in twenty-four hours. Recovery good.

These four cases show what Nature will sometimes do for the septic uterus when given a chance. They also support the view that it is not always necessary to extirpate the womb in suppurative inflammation of its parenchyma, and that such operations should be confined more closely to cases in which the uterus is thoroughly septic or riddled with abscesses. The latter are rare, fortunately, for they do not stand operations well. They also show that infection of the puerperal uterus does not necessarily mean that the entire organ is hopelessly contaminated, but that intense foci may be circumscribed by Nature and relieved without hysterectomy.

The diagnosis is chiefly by exclusion, therefore uncertain without recourse to abdominal section. It was by this means that the cases above reported were discovered.

If the external os (uteri) has contracted normally and there is little or no discharge from the same, it is reasonably certain that the uterine cavity is free; but go further and examine the appendages. If they are healthy, palpate the body of the uterus. If roughened or nodular—which is not *easily* felt through the abdomen unless the cases is hopelessly involved, or the uterus studded with multiple abscesses—abscess is likely present. These nodular points must be differentiated from small fibroid tumors, which are much harder and stand out more prominently from the peritoneal surface.

If in doubt, dilate and explore the uterine cavity with the finger and curette. If the results are negative, septic inflammation from that source is excluded. If the appendages and peritoneum are free they also are excluded. Therefore, an accelerated pulse, elevated temperature, chills, etc., following abortion or parturition, indicate abscess under the above-mentioned conditions, and demand abdominal section, whether there are any physical signs to support the diagnosis or not.

If the uterus is much too large for the period of the puerperium in which it is found, involution has been checked, and the greater the interference and accompanying metritis, the graver is the disease and more numerous the abscesses. Upon the hand, if the uterus is

small and firm, with the other conditions present, the abscesses will be small, limited in number, and circumscribed, with a barrier of lymph.

Sapræmic infection, associated with sepsis, or mixed infection would not likely set up single abscess, but a precipitate course is likely to follow—either a saturation by preformed ptomaines, or an overwhelming dosage of septic infection (pus-producing), setting up a violent metritis—filling the uterus with abscesses.

These violent cases are not to be treated by drainage—a death certificate is most frequently in demand, for they die under the expectant treatment, and die more promptly under hysterectomy, with few exceptions.

It is therefore emphasized that cases should be selected for treatment by incision and drainage, for if the entire uterus is septic or abscesses multiple such measures are useless.

As their location is usually near the fundus uteri, the shortest and most direct route to the exterior of the abdomen is above the pubic bone. By this route we avoid contamination of the tube tract and its resulting sinus. The tube can be removed early and the apperture closed.

Drainage by the vagina is usually more prolonged on account of infection from imperfect sterilization.

The number of cases so far are insufficient to fix the best methods of detail regarding drainage and avoidance of dead spaces.

In small abscesses, evacuation, thorough scraping, sterilizing and drainage, as here practised, is all that is required. The drainage may, perhaps, be just as effectually done in some other way, but the principle is the same. There is only a small quantity of pus to contend with, and that is removed by the operation; the drainage is, therefore, designed for the purpose of enabling the peritoneum to cut off and surround the abscess-pocket with a protective wall of lymph, or agglutination of omentum, intestines, etc.

In larger cavities it is perhaps safer to remove the outer walls of the pus-cavity, thereby converting it into a simple depression or excavation which would possess none of the dangers of a dead space.

In the foregoing cases, one was treated by stitching in or depressing the outer wall, but in case of defective sterilization the sutures are liable to become infected, therefore in a series of cases it is less likely to meet with success than excision, as here described.

At the time this case was done, this feature had not occurred to me, for not being aware that a case of this kind had to be dealt with it had received no study or thought on my part.

If excision would destroy much uterine tissue, direct drainage of the pus-cavity may be practised, either with gauze or tube, with a view of allowing it to fill up by granulation. This, perhaps, would meet with the approval of those who do not like to rely upon the protective powers of the peritoneum.

Flushing of the pelvic or abdominal cavity should be resorted to as in ordinary conditions, that is, when sponging will not effectually cleanse the same.

UTERINE DRAINAGE; DRAINAGE-TUBE *VERSUS* GAUZE.*

Presentation of Two Instruments to Facilitate both Methods of Treatment.

By W. Evelyn Porter, M.D., New York.

Prompted by recent expressions of dissatisfaction as to the efficacy of gauze in draining the uterine cavity, and realizing the fact of the limited experience of most gynæcologists in the use of the uterine drainage-tube, the writer has chosen this subject for consideration this evening.

As early as 1848 mechanical devices were suggested by Simpson and others, in intra-uterine treatment. Valliex, in 1851, advocated the use of an intra-uterine stem, similar to that previously devised by Simpson. In 1868 the subject was reviewed and discussed at length before the London Obstetrical Society.

About this time Sims' operation of incision and dilatation of the cervix was being tried; and Ellinger, in Germany, and Ball, in this country, were advocating the use of steel dilators. In 1877 Van de Warker read an elaborate paper before the American Gynæcological Society, which was very generally discussed. The stem, at that time, had numerous advocates, although its use was opposed by many. Thomas, in discussing the paper, severely criticized its use; although, in a paper read before the same society eleven years later, he presented a glass stem, and, in referring to his previous views,

* Read before the New York Obstetrical Society, April 12, 1898.

tersely remarked: "I try to mend the fault of yesterday by the wisdom of to-day."

It should be specially noted that during the entire period referred to, the subject of drainage was scarcely mentioned; the object of the stem and operations upon the cervix having been to overcome flexion and the supposed results of flexion. To the President of this Society is due the credit of being the first to suggest and to demonstrate to the profession the importance of uterine drainage in these conditions. In a paper, entitled "Anteflexion of the Uterus, Its Ætology and Associated Pathological Conditions," published in 1884, he refers to the necessity of proper drainage, and advocates the use of the hard-rubber drainage-tube, which he had devised and used six years before. The instrument which I shall show you is essentially the same as the one used at that time.

In 1886, Vulliets advocated the use of iodoformed cotton as a uterine drain. From 1884 to 1888, various forms of drainage materials were suggested, but no satisfactory method of application of any one principle was formulated.

To our distinguished fellow, Dr. Wm. M. Polk, we are indebted for developing the details of gauze packing, as practised to-day. In 1888 he read two admirable papers upon the subject; the first, before the Practitioners' Society, and the other before the American Gynæcological Society. In December, 1891, before the Academy of Medicine, he advocated gauze packing for salpingitis and perimetritis, when associated with metritis and endometritis, and reported forty cases.

Dr. Murray, in 1893, recommended a similar course at a meeting of the American Gynæcological Society, and reported a number of cases successfully treated in this manner. During the past five years numerous articles have been written by the advocates of gauze drainage, but so perfect were the details, as described by Dr. Polk, that practically no improvements in technique have been made since then. Saenger, in 1894, before the Leipsig Obstetrical Society, was one of the first to boldly deny the possibility of draining the uterus with iodoform gauze, asserting that it acted as a tampon, obstructing, rather than favoring, drainage.

Dr. Coe, in an article published in the New York Polyclinic the same year, commenting upon Saenger's views, presents the following conclusions: "Gauze tamponade of the uterine cavity is not likely to maintain its present high position in gynæcological surgery, will either be entirely abandoned (at least in aseptic non-puerperal

cases) or some form of temporary stem or dilator will be used after curettage, which maintains the patency of the os, without plugging up the cervical canal or encroaching upon the uterine cavity." Here, I believe, was struck the keynote to the situation as it presents itself to-day. In support of this belief are the personal replies of a number of gentlemen; among them, some of the most prominent surgeons, gynæcologists, and pathologists of this country and Europe, to whom Dr. Coe sent circulars of inquiry in 1895 upon this very subject. To Dr. Coe I am indebted for the privilege of carefully reviewing these opinions, and, with his kind permission, I quote from his summary, taken from an unpublished paper written by him in 1895.

Several questions, bearing upon the general subject of gauze drainage, were presented; as those of you who received the circular will recall. The one bearing particularly upon the theme of this paper was worded as follows: "Do you use gauze drainage after curettage of the uterus in septic, or non-septic cases, or both?" "Fifty-nine replied that they employed gauze in septic cases and twenty-one that they did not; fifty-nine that they used it in non-septic, and twenty-three that they did not; forty-four in both septic and non-septic." Although, as you will observe, the majority at that time used gauze, in reviewing the circulars I noted that many of them expressed decided doubt as to its efficacy, stating that they contemplated discontinuing its use. Further investigation since that time has shown that not only many of these gentlemen, but other operators of prominence, have either partially or entirely abandoned it. Dr. Coe, in concluding his summary of the subject as presented by the letters, says: "In short, the whole subject of the *modus operandi* of capillary drainage seems to be in a transition state, so that it is safe to predict that the next few years will see radical changes of opinion."

There is probably no region of the human body in which there is greater necessity for satisfactory drainage than the uterine cavity, communicating, as it does, in the normal state, directly with the peritoneal cavity through the Fallopian tubes. The entire structure of its walls is interwoven with lymphatics and blood-vessels, affording direct communication with the general vascular and lymphatic systems. The uterus is distinctly a lymphoid organ; its inner surface penetrated by numerous minute crypts, which extend into the muscular structure and are surrounded by lymph-spaces forming actual cavities. It will thus be seen that the anatomical arrange-

ment of the lining of the interior of the uterus affords a most extensive surface for secretion and absorption. Moreover, there are two important factors in the structure of the cervix, which tend to interfere with normal drainage. First, the compound racemose glands, which secrete a thick, tenacious mucus; and, second, the circular (muscular) fibers which contract upon the slightest stimulation, obstructing the canal.

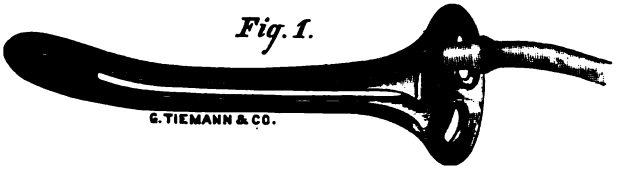
The physiological activity of the corporeal endometrium at regular intervals between the ages of fourteen and forty-four years, should be borne in mind. During this period there is an increased vascular pressure, with a marked swelling of the endometrium due to the enlargement of the old, and formation of new capillaries and extensive increase in lymphoid cells, followed by rupture of the capillaries, extrusion of lymphoid cells, and loosening and throwing off of the lining epithelium.

In what organ requiring surgical invasion do we find such physiological activity? The conditions found here are certainly not to be compared with those in other parts of the body, where there is no active secretion or tissue change, and no mechanical obstruction to drainage. The argument, therefore, that the tendency in surgery at the present time is to avoid drainage (a fact which we all appreciate), should not influence us unduly in dealing with this organ. In addition to the physiological conditions presented, we have numerous pathological states demonstrating clearly the necessity for drainage. Endometritis in some form exists in nearly every type of uterine disorder demanding drainage, so that brief reference to this disease is desirable before proceeding further. It should be considered from the standpoint of its ætiology, in that the treatment is governed largely by the causation. I shall adopt, therefore, Baldy's classification of *simple endometritis*, which may be either hypertrophic or atrophic in character, and *septic endometritis*, including the puerperal and gonorrheal varieties.

In the consideration of the practical application of drainage, I shall refer to two forms of drainage-tubes which I use in my own practice, and in order that you may be familiar with them, I present them at this time for your inspection. The first is a modification of Wylie's intra-uterine tube, which overcomes the only difficulties which I have ever experienced in the use of that instrument, namely, the occlusion of the lower portion of the slot by cervical mucus, and the obstruction to cervical drainage by the solid flange at its base. The tubes are made either of hard rubber or aluminum, preferably

the former, and consist of two bars an inch and three-quarters in length, slightly curved to conform with the shape of the normal uterine canal. The bars unite at the upper end, forming a slightly enlarged bulb, which favors the self-retention of the instrument in utero. At the base they terminate in a spreading flange an inch in diameter, which is fenestrated to avoid obstruction to cervical drainage. There are two small openings in the flange for retention sutures when needed. The slot between the two bars is one-eighth

Fig. 1.



of an inch wide, forming ample drainage space. To avoid any possible occlusion of the slot by mucus, one of the bars is hollow, with an opening at the upper end on its inner surface, and a small projecting tube at the base of the instrument, with bulb-tip for the attachment of a rubber tube through which solutions may be forced to flush out the slot.

It should be observed that this instrument is essentially a hollow drainage-tube, and should not be confused, under any circumstances, with the solid stem pessary.

The other instrument, which I show you, is intended to be used

Fig. 2.



either alone or in conjunction with gauze, to maintain free drainage in the cervical portion of the uterus. The size varies greatly according to the class of cases in which it is to be used, the calibre of the tube varying from a quarter of an inch to one inch in diameter, and the length from one and three-quarters to two and a half inches. It is made either of hard rubber or aluminum, and consists of a straight tube with deep grooves in the outer wall to facilitate the escape of cervical secretions. The base, or outer end, is formed by a spreading, fenestrated flange, with a small, flat projection, by

means of which the tube may be held in the grasp of an ordinary dressing-forceps to facilitate its introduction and removal. There are small openings for retention sutures, as in the other instrument.

I am satisfied that a careful trial of either of these instruments, in properly selected cases, will convince any of you of their merits, no matter how much you have been opposed in the past to the use of any form of solid drainage device.

For the purposes of this paper I shall divide the cases demanding uterine drainage into three distinct classes, according to the form of drainage to be employed.

1. Those requiring the uterine drainage-tube.
2. Gauze packing and cervical drainage-tube.
3. Cervical drainage, with or without gauze-drainage.

In the first class we have three, the second three, and the third two varieties of cases, as follows:

1. (*a*) The *undeveloped uterus*, usually anteflexed, with endometritis of the atrophic type.

(*b*) The *small multiparous uterus*, with simple non-septic endometritis.

(*c*) The *small nulliparous* or *multiparous uterus*, with septic or gonorrheal endometritis.

2. (*a*) The *subinvoluted uterus*, with metritis and hypertrophic endometritis.

(*b*) The *large, non-septic, puerperal uterus.*

(*c*) *After operatious* for removal of submucous fibromyomata and polypoid growths.

3. (*a*) The *septic puerperal uterus.*

(*b*) The *septic or non-septic uterus* after incomplete abortion.

1. (*a*) In the undeveloped uterus we have a small uterine cavity, the seat of chronic endometritis, with acute anteflexion and contracted cervical canal, interfering with the escape of secretions. The uterus is acutely sensitive, and the patients suffer from severe dysmenorrhœa, and, in nearly every instance, are found to be sterile. They present themselves to the surgeon on account of either dysmenorrhœa or sterility; and there is probably no class of cases where the results of proper treatment are more satisfactory, both to the patient and surgeon.

Various forms of treatment have been suggested, including simple dilatation of the cervix with tents, graduated sounds, two-blade steel dilators, incision of the cervical portion of the uterus, introduction of solid intra-uterine stems, and gauze packing. But none af-

ford such satisfactory results as the use of a properly constructed drainage-tube, following thorough curettage.

In order to accomplish all that is desired and avoid the dangers attributed to any form of intra-uterine treatment, the greatest care must be observed in the preparation of the patient for operation, for several days prior to operation she should be instructed to take 1–2000 bichloride douches, using some one of the various devices with vulva-cap or pad attached to the vaginal nozzle, so that the vagina may be distended, bringing the entire surface in contact with the antiseptic solution. A bichloride bath should always be taken before the final preparation for operation, and a green-soap dressing applied to the vulva. When under the anæsthetic, all hair should be removed from the vulva; and the vulva and vagina should be thoroughly scrubbed with tincture of green soap and water. Alcohol should next be freely used to remove the excess of fat, the surface should be dried and thoroughly sponged with a 1–50 solution of formalin or 1–500 bichloride of mercury. A sound is first introduced to ascertain the degree of flexion and condition of the uterine canal. Wylie's uterine dilators with curved blades should be used in dilating the cervix, as it will be found very difficult, and oftentimes impossible, to introduce the larger instruments with straight, or only slightly curved, blades. Some prefer graduated sounds, as the Hanks dilators, but these take somewhat longer, and if the Wylie dilators are used carefully there is little danger of tearing the cervix. After curettage, the cervix is again dilated and Polk's cervical speculum introduced. The uterus is irrigated by passing a small catheter through the speculum, washing away all clots and remaining débris from the curetting. Dry, sterilized cotton is next inserted on an applicator, and the remaining solution and blood removed. The cervical speculum is withdrawn, the vagina irrigated with peroxide of hydrogen, or 1–2000 bichloride solution, and the drainage-tube introduced; but be sure that it passes well up into the uterine cavity, for I have seen many cases of failure in its use, due to the fact that the tube was simply passed into an elongated cervix, not getting beyond the point of flexion above the internal os.

If the cervical canal is small, as it usually is in these cases, the instrument which I have shown you will be retained without difficulty.

Wylie suggests the use of an ordinary retroversion pessary to hold the cervix back, and thus favor the retention of the tube in place.

The rubber tubing should be left coiled in the vagina, the end being occluded by tying with silk. An occlusion dressing should be applied to the vulva and left undisturbed for about six hours. The drainage-tube may then be cleared of any clotted blood that may have accumulated, by irrigation through the rubber tube, using plain, sterilized salt solution.

One bichloride vaginal douche, and clearing of the tube once daily, is all that will be necessary in the way of after-attention. The drainage-tube may be left in place from one to four weeks, or longer, according to the indication in the individual case; the irrigation of the tube being discontinued after the fourth or fifth day, and only resumed in the event of any evidence of obstruction to drainage, or upon the appearance of menstruation.

(*b*) With a small multiparous uterus, less difficulty will be experienced with the proper divulsion of cervix and introduction of the drainage-tube, and it may be necessary to secure the tube by silkworm-gut sutures to insure its being retained in proper position. When the endometritis is of the hypertrophic variety, with thickened endometrium or polypoid growths, there is usually a larger amount of solid débris to be drained away subsequently, and I therefore continue the clearing of the drainage-tube over a longer period of time.

(*c*) With the small septic uteri, including the gonorrheal variety, the essential point is to remove the accumulated septic material as promptly as possible to prevent extension of the process to the Fallopian tubes and to render the cavity aseptic by application of carbolic acid or formalin before introducing the drainage-tube. Here, as with the preceding form, it is important to maintain free drainage, and if there is any elevation of temperature, I use an antiseptic solution in clearing the tube, instead of the normal salt solution.

It should be noted that in the conditions already referred to, in which I consider the intra-uterine tube as the best form of drain, I include the cases only where we have a uterus with comparatively small cavity. Where we have a large uterus with relaxed walls, uterine packing is certainly of great value, as it promotes uterine contractions and favors depletion of the uterus in a most satisfactory manner. Probably the most common condition demanding this form of treatment is the one first mentioned in the second class of cases, *viz.:*

2. (*a*) The subinvoluted uterus, with metritis and hypertrophic endometritis, where the cavity is enlarged and cervix patent, the

endometrium thickened and sometimes covered with fungoid growths. Here, as with the secondary variety of the first class of cases, however, we have considerable solid material to be drained away, so the packing must not be left in place too long or else it will serve as an obstruction. It is a matter of common observation, upon withdrawing the gauze after curetting and packing the uterus, to have several drachms of retained fluid and solid débris escape. The technique of packing the uterus, as described so admirably by Dr. Polk, is so familiar to you all that I shall simply refer to but one or two points in passing. Notwithstanding the evident advantage in the use of the cervical speculum in successfully packing the uterus with gauze, I have observed that many operators in this city failed to use it. They attempt to pack with ordinary long dressing-forceps, through a more or less contracted internal os, and, as a result, fail to introduce one-half the requisite amount of gauze. The gauze, moreover, that they do introduce is saturated with blood before it reaches the uterine cavity. My practice is, after removing as much as possible of blood and solid débris by irrigation through the speculum, to render the cavity as dry as possible and thoroughly aseptic before packing. I then introduce my cervical drainage-tube, fastening it securely in place by two silkworm-gut sutures. In packing, I use the tampon-screw, taking care to avoid any possibility of the gauze coming in contact with the vaginal wall, or anything which might act as a source of infection.

After the packing is completed I irrigate the vagina with a strong, antiseptic solution and apply the occlusion dressing, as before. During the first few hours the gauze will be found to drain admirably by capillary action. Soon, however, the uterine contractions compress the gauze into a solid ball; the coagulated blood and detached shreds of tissue remaining form a coating over the outer portion, and drainage through the gauze is occluded. A certain amount of drainage will take place along the outer surface of the gauze between it and the uterine wall, and to favor its exit I withdraw a few inches of the gauze, which has been forced down against the end of the tube, repeating this procedure at intervals during the first twenty-four to forty-eight hours. At the end of forty-eight hours the gauze should be removed, the cavity irrigated through the cervical tube, which is left in place, and the cavity repacked.

The advantage of the tube which I have presented will be evident, not only in facilitating drainage, as it unquestionably does, but in relieving the patient of all the pain and discomfort consequent

upon dilatation of the cervix, reintroduction of the cervical speculum, and repacking the uterus.

Great care should be observed in maintaining the aseptic condition of the vulva and vagina in these cases by frequent changing of vulva dressing, and thorough irrigation with strong antiseptic solution before and after removing the first packing. The gauze should be gradually removed after the second packing with the same object of facilitating drainage, although the second gauze may usually be left in place somewhat longer, if there is no elevation of temperature or other evidence of obstruction to drainage. As stated in my description of the drainage-tube, one great advantage exists in the grooves on its outer surface, serving for drainage of the mucus and secretions from the cervix, which have always proven an additional obstruction to drainage when coming in contact with the gauze.

(*b*) With the large, non-septic puerperal uterus, the cervix is patent; the normal contractibility of the muscular wall remains, responding readily to stimulus.

It should be remembered that the object of packing or tamponage in this class is not to facilitate drainage after the first few hours, but to promote uterine contractions and favor involution. The details in its application are the same as with the first class.

(*c*) After removal of submucous fibromyomata, and polypoid growths, gauze packing is often of service: first, in checking hæmorrhage, and, later, in promoting uterine contractions. Here, also, the cervical tube should be used and the gauze gradually removed to favor the drainage of solid matter, as well as the serum, which escapes at first by capillary action through the gauze.

There are many to-day, possibly some among you, who, on account of the failure experienced in attempting to secure satisfactory drainage by the old method of gauze packing without proper cervical drainage, are advocating no drainage at all. Unquestionably, in certain relaxed conditions of the cervix, where there is no flexion in the uterine body, drainage will be for a time reasonably satisfactory. Sooner or later, however, as the normal tone of the uterus is restored, the circular fibers of the lower portion of the uterus will contract, mucus will be thrown off by the cervical glands, and drainage will be more or less obstructed. To avoid this and facilitate drainage, I suggest to you the use of the cervical drainage-tube either alone or with the addition of a small amount of gauze loosely inserted to favor capillary drainage.

3. (*a*) In the last class of cases, the septic puerperal uteri are

large and flabby, usually anteflexed, due to relaxation and lack of muscular tone. They respond slowly to stimuli, and the endometrium, and even the muscular walls, are often necrotic. I have always advocated free irrigation and drainage, and to facilitate this, after proper preparation of the vulva and vagina, I insert and fasten to the cervix a large-sized drainage-tube. As a rule, unless there are decided septic foci in the uterine wall, it will be wiser not to curette, for by doing so you open up fresh surfaces for septic absorption. If pieces of necrotic tissue are retained in the uterine cavity, remove them by the finger or some form of placental forceps. If necessary, use the curette gently to facilitate the removal of such foreign matter as may adhere to the uterine wall, but do not stir up the general surface of the uterine cavity unnecessarily. Irrigate freely by means of a glass tube; or, where there is flexion of the uterus, by a semiflexible catheter passed through the cervical tube, at frequent intervals, regulated according to the degree of temperature. If the patient is very weak, I attach a rubber tube to the catheter, which is left in utero to avoid the pain and discomfort consequent upon its frequent introduction. In this way, the patient is only disturbed by the placing of the douche-pan, which is not a very serious factor.

To do general curettage, opening up fresh spaces for infection, and then packing with gauze, seems manifestly unwise. In doing it we are preventing the throwing off of effete material from the endometrium, placental site, and lymphatics, and are obstructing the egress of pus, laden with germs and toxines. It is true we may favor involution somewhat, but the uterine wall, as I have stated, is in such a condition as to respond but slightly to stimulus of any sort. Furthermore, drainage is the desideratum, and, instead of favoring it we are obstructing it. If there is marked flexion of the uterus and we feel that by capillary drainage the accumulation of septic fluid in the upper part of the uterus may be avoided, a strip of gauze may be passed up beyond the point of flexion and packed loosely. It will soon, however, become foul and coated with pus and blood, so that I have found the use of the cervical drain and irrigation, through a flexible catheter passed beyond the point of flexion, the ideal treatment in these cases. Not only is immediate relief obtained by this method, but the danger of infection of the lymphatics and pelvic peritoneum is materially lessened.

(*b*) The septic or non-septic uterus, after incomplete abortion, usually demands curettage and drainage. The uterine cavity is

much smaller, and the uterine walls thicker and not infiltrated with septic material, in the septic variety, to the same extent as the full-term uterus. The entire surface can be freed from septic material by means of the curette much more readily than with the larger uterus. The cervix is less patulous and a smaller-sized cervical tube (about the size of the larger one which I present this evening) may be used. If the sepsis persists, irrigation may be practised, as with the preceding class, but the cervical drain should be invariably employed.

In closing, allow me to present the following conclusions:

1. Given a small anteflexed uterus, with history of dysmenorrhœa and sterility, the best results are to be obtained by the use of the intra-uterine drainage-tube shown this evening.

2. With a large, flabby, subinvoluted uterus, gauze packing is of advantage in promoting uterine contractions, favoring depletion, and checking hæmorrhage, when present. It should be used in conjunction with the cervical drainage-tube, for the small amount of gauze commonly left in the cervical canal does not maintain the patency of the os and afford satisfactory drainage.

3. Where gauze packing or tamponage is employed, the gauze should be gradually withdrawn to allow of the escape of retained débris, and entirely removed at from thirty-six to forty-eight hours. Gauze, when compressed and coated with blood and mucus, serves to obstruct rather than favor drainage.

4. Where capillary drainage is desired, gauze should be loosely inserted and used with the tube to secure free drainage through the cervical canal.

5. In puerperal sepsis, use a large cervical drainage-tube, preferably without gauze, and irrigate frequently with a catheter introduced well past any point of flexure that may exist in the uterus.

6. To the advocates of no drainage at all, I beg to urge a trial of the cervical drainage-tube, as being of decided advantage even in a comparatively patulous os.

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THE ABORTIVE TREATMENT OF PUERPERAL AFFECTIONS.

By Wallace A. Briggs, M.D., Sacramento, Cal.

In order briefly and clearly to set forth the method I have pursued in the early local treatment of puerperal infections I shall here confine my attention to that phase of the treatment of these diseases indicated by the title of the present paper.

Puerperal infection is at first a local disease amenable to local treatment. To this statement I admit no exception whatever. It is a question only of immediate and thorough local treatment. That, in sufficiently early diagnosis, there are difficulties, at times insuperable, in no wise invalidates this premise. Do our failures in diagnosis disprove the sovereign efficacy of quinine in malarial infection? Successful abortive treatment of puerperal sepsis by local means, however, is possible only in the early stage, before infection has invaded the deeper tissues or extended to the tubes. Later than this local treatment may be curative but not abortive. Hence, the abso lute necessity of the earliest possible intervention. *Local treatment must be instituted on the very first intimation of infection.* To wait for a positive diagnosis is homicidal.

Seriously suspecting puerperal infection, then I proceed at once as follows:

1. Prepare the patient and her surroundings very carefully as for a major operation *per vaginam.* Acting here on suspicion only we should avoid primary infection just as sedulously as in labor itself and superinfection no less so.

2. If the perineum be torn and seem infected, remove the stitches at once.

3. Place the patient in exaggerated Sim's position with the right

knee well drawn up so that the fundus will be the lowest part of the uterus.

4. Remove from the introitus a small quantity of lochia for culture and microscopic examination.

5. Cleanse vagina thoroughly with a copious mild antiseptic douche—formalin 1:500.

6. Examine vagina and cervix carefully by a good light for lacerations.

7. Remove lochia from the cervix for culture and microscopic examination.

8. If the uterus does not seem infected cleanse lacerations of the cervix, vagina, and perineum, and pack them with gauze saturated with antiseptic glycerine (formalin, alcohol, glycerine: 1; 100; 400); repeat every six hours.

9. If the uterus seem to be infected, or prove to be so on culture and microscopic examination of cervical lochia, or if the signs of infection be fairly positive and do not abate within six hours by vaginal antisepsis as advised under "7," repeat the antiseptic preparation of the patient, cleanse vagina by copious antiseptic douche, cleanse and disinfect cervical canal thoroughly, attach the combined drain and irrigator to fountain syringe at an elevation of three feet; turn on the antiseptic solution (formalin 1:500); introduce combined drain and irrigator slowly into the uterus and wash out the cavity thoroughly; detach the fountain syringe from the irrigator and with the piston syringe inject hydrogen peroxide until effervescence ceases; turn patient on the back until uterus drains, then replace her in exaggerated Sim's position so that the fundus will be dependent, *making sure* that the fundus is the lowest part of the uterus, and fill the uterus with antiseptic glycerine (formalin, alcohol, glycerine: 1; 100; 400); leave the combined drain and irrigator *in situ;* leave the patient in exaggerated Sim's position for at least an hour.

Repeat the formalin douche every twelve hours and the hydrogen peroxide and antiseptic glycerine injection every four hours, after the third or fourth injection substituting two-per-cent. lysol for formalin and dress the lacerations every eight hours until convalescence is established, or the futility of local treatment is demonstrated.

This method, with slight variations, I have now employed for five years with the utmost satisfaction. As characterized in the title of this paper it is *abortive.*

Its distinguishing features are: (1) continuous antisepsis main-

tained by the frequent filling of the *dependent* uterus with a positively antiseptic liquid and by keeping the *fundus lowermost* for considerable and regular periods, and by the antiseptic packing of lacerations; (2) continuous exosmosis or tissue drainage maintained by the constant contact of glycerine with the infected surfaces; (3) continuous if slight antiseptic endosmosis maintained by the constant bathing of the tissues by antiseptic fluid; and (4) continuous drainage maintained by the constant presence in the uterus of an efficient drain.

THE LIMITATION OF HYSTERECTOMY FOR CARCINOMA OF THE UTERUS.

By John H. Rishmiller, M.D., Minneapolis, Minn.

It is a very difficult problem in gynæcology to come to a conclusion whether to operate or not in a case of carcinoma of the uterus which has, in the first place, neglected to consult a physician; and, in the second place, has progressed so far that it is almost impossible to determine precisely to what degree the lymphatic structures are involved. In looking over the numerously reported cases where the surgeon goes so far as making an honest confession as to state that "the patient did well for several months but then a recurrence presented itself," such as in the broad ligaments, vagina, rectum, bladder, etc., it appears to one that there has been a lack of skill in diagnosis. It is due mainly to our mistaken pathological diagnosis that we fail in our prognosis; in arriving at an exact conclusion how far the carcinomatous disease has progressed, and whether the involved structures may be removed by a clean-sweeping operation. Should we be unable to perform total ablation of the malignant structures, unnecessary suffering is caused by the well-meaning, although too frequent and inexcusable, medical adviser.

In attempting to perform hysterectomy and remove a uterus from a carcinomatous focus is exhibiting indiscretion and surgical fanaticism. This unwise procedure, if you do not kill your patient directly, which is frequently the case, it is far less palliative than simple curettage followed by cauterization.

In determining the practicability of performing hysterectomy it is important to differentiate between cancerous extension from the uterus to either the utero-sacral or broad ligaments and simple in-

flammatory involvement of these ligaments. A suspicion of the foregoing condition should be created in our mind when the mobility of the uterus is lessened and discloses a tumefaction and puffiness at its sides. We find the inflammatory adhesions higher in the pelvis, mainly posterior to the uterus and not continuous with the cervix. In cancerous anchorage of the uterus we easily detect the involvement of the base of the broad ligaments which is directly continuous with the hard and friable cervix, and situated on the side instead of behind the uterus. Furthermore, we must not neglect to consider that both the inflammatory and malignant disease may concomitantly involve, respectively, the broad ligaments and cervix uteri. In this instance, a clinical history of chronic inflammation may invariably be elicited from the patient and aid in elucidating the differentiation. Albeit, an anæsthetic examination should be insisted upon when frequently the chronically adherent and enlarged tube and ovary may be made out. Likewise, whenever there exists a doubt as to the extent of the carcinomatous involvement, an examination under an anæsthetic, bimanually per vaginam and rectum, then with the aid of the sharp curette to see whether the disease has passed through the cervix into the adjacent cellular tissue, and, lastly, to explore the bladder, if necessary, with the finger per urethram after dilatation, should never be neglected for prognostic elucidation and operative precision. When the examination has detected an involvement of either the bladder or the rectum absolutely no hysterectomy should be undertaken, as it would be impossible to remove all the perirectal or perivesical glands, and an inevitable recurrence will eventually terminate life. While it is far easier to *seemingly* remove all cancerous infiltration of the broad ligaments than of the bladder and rectum, nevertheless, life cannot be prolonged and a recurrence prevented after cancerous infiltration has extended beyond the uterus in such a manner as to limit its free movements. Such a good and reliable authority as Pozzi has said, "Whenever the cancer has extended beyond the limits of the uterus there should be no attempt at total extirpation." In cases where the vagina is involved an operation, including the removal of the whole vaginal fornices with the uterus and adnexia, is more likely to eradicate the malignant disease than where the cervix is affected.

Cancer of the cervix is the most malignant type and recurrence is more liable, because the lymphatic system is more extensive in this particular locality than at either the corpus uteri or portio vaginalis. Cancer of the body is the most amenable to radical operation

and the least number of recurrences may be expected. Cancer of the portio vaginalis, provided all of the disease has been removed, gives a very favorable prognosis.

It seems to be the consensus of opinion that one main cause of recurrence is attributable to permitting some of the carcinomatous material to come in contact with the wounded surfaces made during the operation. This infectiousness may be termed an "inoculation recurrence," and it seems to occur in patients in that particular state of health which made the original disease possible.

Carcinoma of the body of the uterus is a comparatively rare disease and may be put down at about two to three per cent. of all cases of uterine cancer. Through the invasion of the lymphatic system comes the involvement of the connective tissue, which finally anchors the uterus. Lymphatic infection occurs late and ultimately fixation of the uterus is an incident of an advanced stage only. This long unembarrassed movement of the uterus greatly favors radical treatment, and, therefore, very few cases of carcinoma of the corpus uteri came to the gynæcologists' observation in an inoperable condition.

In corresponding with Dr. Howard A. Kelly regarding the immediate operative mortality in hysterectomy for carcinoma of the uterus, he has asked Dr. W. W. Russell, his associate, to send me their statistics of the Johns Hopkins Hospital. These I hereby append, with an appreciative indebtedness to Dr. Russell.

THE JOHNS HOPKINS HOSPITAL REPORT.

Immediate Results of Hysterectomy for Cancer of the Uterus by Clark's Method.

Carcinoma, cervix uteri, . . .	24 cases.	
	1 death.	
Carcinoma, corpus uteri, . . .	4 cases.	
	1 death.	
Total, . . .	28 cases.	2 deaths.

Death in Case of Cancer of Cervix due to hæmorrhage. Operation rendered exceedingly difficult by extreme flexion and fixation of tuberculous tube-joint, extensive inflammatory disease of the tubes, and very thick abdominal walls. The hæmorrhage could not be satisfactorily controlled during operation on account of the above-mentioned complication interfering with exposure of the pelvic organs. The patient died a few hours subsequent to operation.

Death in Case of Cancer of the Uterine Body was due to infection. Origin not determined.

These cases are all which have been operated upon by Dr. Kelly, Dr. Clark, and myself, from February 29, 1896, to December 1, 1897.

Conclusions.

1. Total extirpation of the uterus is justifiable where there exists a strong clinical suspicion corroborated by microscopical evidences [although not absolute proof] of malignant disease.

2. Hysterectomy is indicated in all cases where a positive diagnosis of carcinoma of any part of the uterus is made.

3. Contraindications for uterine extirpation are all those where the uterus is fixed and immovable in the pelvis, through extensive carcinomatous infiltration into the broad ligaments.

4. An operation for extensive rectal implication may seemingly appear feasible, but the infected, although not suspected, lymphatic perirectal gland can rarely ever be entirely removed and will soon kindle an inevitable recurrence.

5. A radical operation is of no avail whenever the bladder or ureters are involved.

Dayton Building.

BIRTH OF THE SECUNDINES.*

A Clinical Study of the Relative Frequency of Methods of Birth of the Secundines and of the Relations of these Methods of Birth to Hæmorrhage; Based upon the Observation of 2,700 Cases.

By Ervin A. Tucker, M.D., New York.

(*Continued.*)

Résumé of Study I.

In this study it has been proved that:

1. The *order of frequency of placental birth*, as observed *clinically*, is:
 1. Edge first fœtal surface out—most frequent.
 2. Fœtal surface first and out.

* Read before the New York Obstetrical Society, March 8, 1898.

3. Edge first maternal surface out.
4. Maternal surface first and out.
5. Edge first—least frequent.

2. The *same order of frequency* as the above obtains when the *Credé method* of expression is used.

3. The *order of frequency of spontaneous placental birth* is:
 1. Edge first fœtal surface out—most frequent.
 2. Edge first maternal surface out.
 3. Fœtal surface first and out.
 4. Maternal surface first and out.
 5. Edge first—least frequent.

4. The *birth of the fœtal surface out* is favored by:
 (a) the Credé method of expression,
 (b) maturity (labor at full term), and
 (c) primiparity.

5. The *birth of the maternal surface out* is favored by:
 (a) the spontaneous expression of the placenta,
 (b) prematurity of labor, and
 (c) multiparity.

6. The *birth of the edge first* (both surfaces out) is favored by:
 (a) The Credé method of expression,
 (b) prematurity of labor, and
 (c) primiparity.

7. The *birth of the edge first* (without regard to the surface out) is favored by:
 (a) The spontaneous method of expression,
 (b) maturity, and
 (c) primiparity.

8. *The frequency of the birth of the fœtal surface out is, as observed clinically, more than twice that of the maternal surface out.*

Study I.

References and Comments.

1. WINCKEL—*Lehrbuch der Geburtshülfe*, 1889, s. 137: "When the placenta, lying as it usually does with its edge somewhat above the internal os, has its centre pushed away from the uterine wall, the membranes cannot fail to become inverted and the fœtal surface must appear first at the vulva. . . . If the lower part of the placenta near the internal os is separated first, . . . it enters the cervical canal and

drags after it the upper part of the placenta; in this case first the edge and then the maternal surface becomes visible and finally come the membranes. In 100 cases [spontaneous] this method of expulsion occurred 10 times." S. 138: "There are other cases in which the placenta appears to be half inverted, and then, by a rotation about its long diameter, the upper part of the maternal surface is born uncovered by membranes (i. e., edge first). This occurred 14 times in 100 cases." Winckel, therefore, recognizes three ways in which placentæ may be born, viz.: 1. Fœtal surface cut (this includes really two methods—fœtal surface first and out and edge first fœtal surface out, as already explained); 2. edge first maternal surface out; 3. edge first.

2. DUNCAN—"*On the Mechanism of the Expulsion of the Placenta,*" Edin. Med. Jour., April, 1871, p. 900: "Interference with the natural mechanism of delivery, generally by pulling upon the cord, produces an unnatural mechanism—inversion of the placenta."

As 75 out of the 149 spontaneous cases reported in this paper were born "inverted," this method can hardly be called "unnatural."

Page 901: "If the placenta came inverted, we should have a body passing that required at least twice as much space as is required if it passes edgeways and only longitudinally folded."

While this is true in the case of a placenta born fœtal surface first and out, the objection does not hold against one born edge first fœtal surface out, which Duncan includes in "inverted," as he means this word to be understood. Duncan, therefore, claims edge first to be the rule of placental birth, but admits that edge first maternal surface out may occur.

3. PLAYFAIR.—*Science and Practice of Midwifery,* 4th Amer. edition, 1885. On pages 265 and 266 Playfair agrees with Duncan that the "separated placenta is expelled edgeways," but on page 292 he says, "The uterine surface of the placenta is generally expelled first, the cord being within the membranes." In this statement, however, he is speaking of the Credé expression, which he employs while the patient lies on her left side (see illustration on p. 293). It has been proved that the Credé method favors birth of the fœtal surface out, and it is not likely that the left lateral posture, though a most awkward one for delivery of the placenta, is a factor potent enough to change the method of placental birth.

4. MCLANE.—*Obstetric Lectures, College of Phys. and Surg., New York*: "If there is no interference, the placenta will be folded up in the uterus and be expelled edgewise. If traction is made on the cord, or

if a hæmatoma forms between the placenta and uterine wall, the placenta will come away fœtal surface first."

5. B. F. SCHULTZE.—"*Ueber den Mechanismus der spontanen Auscheidung der Nachgeburt,*" Deuts. Medicin. Wochen., Nr. 51 and 52, 1880, s. 689: "The method which I have described and illustrated [i. e., fœtal surface born first], in which the escape of blood behind the placenta plays so essential a rôle, is the more frequent, so far as actual observations of spontaneous cases show. The method described by Duncan, in which there is a smaller collection of blood behind the placenta, although not a smaller blood-loss, is less frequent." Schultze does not seem to have noted birth "maternal surface first and out," with membranes not inverted, and yet this method was observed 21 times in 149 spontaneous cases.

6. DOHRN.—"*Zur Behandlung der Nachgeburtszeit,*" Deut. Medicin. Woch., 1880, Nr. 41. In this article he agrees with Schultze that the fœtal surface is expelled first.

7. LEMSER.—"*Die physiologische Lösung des Mutterkuchens.*" Giessen, 1885. He examined 168 cases by putting his hand into vagina or uterus immediately after birth of the child, in order to determine the presentation of the placenta, which was afterwards born spontaneously. He says, "In most cases the placenta was folded together upon its maternal surface," i. e., fœtal surface out.

8. BARNES.—*System of Obstet. Med. and Surg.*, 1895, p. 435: "We conclude that both presentations [fœtal surface and edge] may occur spontaneously, and we are prepared to go further and say that the edge presentation, membranes covering the amniotic aspect, may occur under traction upon the cord." See case 8, which agrees with last part of above statement.

9. RIBEMONT-DESSAIGNES.—*Précis d' Obstétrique*, 1894. He states that usually the fœtal surface presents.

10. SPIEGELBERG.—*Lehrbuch der Geburtshülfe*, 1878, p. 134. In reference to spontaneous cases he says: "The placenta is driven out *not* with the fœtal surface first, as is generally represented, but with its edge first and with the uterine or fœtal surface folded in. Birth with the fœtal surface first, i. e., with the membranes inverted, is due to previous traction on the cord." So, edge first fœtal surface out and edge first maternal surface out are the only methods of birth which he has observed in spontaneous cases.

11. LEISHMAN.—*System of Midwifery*, 3d Amer. edit., 1879, p. 259: "In cases left entirely to nature it will almost invariably be found that it is not the fœtal surface, but the edge of the placenta which pre-

sents, and it is this part, overlapped it may be by the membranes, which will be found to pass first both into the vagina and through the vulva."

Now follow three opinions opposed to the above.

12. RAMSBOTHAM.—*Obstet. Med. and Surg.*, 5th edit., p. 126: "The placenta passes through the vagina inverted, so that its fœtal surface becomes external."

13. RIGBY.—*System of Midwifery*, p. 103—says: "The placenta descends into the vagina inverted, i. e., with its fœtal or amniotic surface turned outwards. Whether or not this is produced by pulling on the cord is perhaps a question."

14. CHARPENTIER.—*Traité pratique des Accouchements*, 2d edit., 1889, p. 523: "The mechanism described by Duncan is the exception and not the rule." He quotes the following table: "Pinard and Ribemont found in 77 cases that the fœtal surface presented in 63 cases; that the fœtal edge presented in 11 cases; that the maternal surface presented in 3 cases."

On page 528 he says: "Spontaneous birth of the placenta is far from being as rare as is generally supposed, and in such cases it usually occurs in 10 to 15 minutes after the birth of the child."

15. JEWETT.—*Outlines of Obstet.*, 1894, p. 118, says: "The afterbirth may present by its amniotic surface or be expelled edgewise."

16. DUHRSSEN.—*Geburtshülf. Vademecum*, 1890, s. 20: "The placenta by its own weight sinks down with the fœtal surface first and the membranes are thereby mechanically loosened and inverted. In many cases the placenta is born edge first."

This explanation of how the fœtal surface comes to present is, to say the least, purely theoretical.

Other References.

17. CHAMPNEYS.—"*The Mechanism of the Third Stage of Labor*," *London Obstet. Transac.*, 1883, p. 161.

18. BARUCH.—"*The Third Stage of Labor*," *Amer. Jour. Obst.*, 1885, p. 359.

19. HART.—"*The Third Stage of Labor*," *Brit. Med. Jour.*, 1885, p. 786.

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22. AUVARD.—"*Délivrance physiolog.*," *Gaz. Hebd.*, No. 3, 1887.

23. TOURNAY.—"*Mécanisme de la Délivrance*," *Thèse Agrég., Bruxelles*, 1887.

24. VON CAMPE.—"*Die Behandlung der Nachgeburtsperiode*," *Zeitsch. f. Geb. und Gynæk., Band X.*, 1884, s. 416.

25. FREUND.—"*Ueber den heutigen Stand der Nachgeburtsperiode*," *Arch. f. Gynæk., Band XXXI.*, 1887, s. 473.

26. DANILOWITCH.—"*Etudes cliniques et expérimentales sur le décol. et l'expul. du plac.*" *Arch. de Tocol.*, 1884, p. 656.

27. DYRENFURTH.—"*Ueber die Leitung der Placentarperiode*," *Arch. für Gynæk., Band XXII.*, 1884, s. 334.

28. LUMPE.—"*Zur Physiologie der Nachgeburtsperiode*," *Arch. für Gynæk., Band XXIV.*, 1884, s. 283.

29. REIHLEN.—"*Zur Frage der Behandlung der Nachgeburtsperiode*," *Arch. für Gynæk., Band XXXI.*, 1887, s. 56.

STUDY II.

Relation of Placental Births to Hæmorrhage.

In this "study" it will be demonstrated that there is a relation between the different methods of placental birth and the *frequency* with which hæmorrhage occurs in the third stage and immediately post partum and that there is also a relation between the different placental births and the *quantity* of blood lost. A detailed study of the losses of blood occurring in 2700 labors is the basis upon which subsequent statements are made. These 2700 labors, including full term and premature primiparæ and multiparæ, whose deliveries were completed both by the Credé method and spontaneously, are the same that were reported in Study I.

First, it is necessary to decide upon some standard (purely arbitrary of course), which can be used in determining what cases come under the head of "hæmorrhages" and what under the head of "normal or natural losses of blood." Any escape of blood from the circulation is, strictly speaking, a "hæmorrhage," but the *quantity* which escapes and the *way* in which it escapes are of such importance that the standard adopted in this paper is that, if the quantity of blood lost amounts to over 16 ounces (No. 1), it is called a "hæmorrhage," or, if the blood escapes so suddenly and profusely that treatment is necessary, it is called a "hæmorrhage," even if the quantity lost was less than 16

* No. 1. See Reference 30.

ounces, while all the cases, in which the quantity of blood lost was 16 ounces or less and in which there was no gush of blood profuse enough to need treatment, are said to have had a "natural blood-loss."

It is not easy to determine just how much blood has been lost in a given case, unless some careful method of catching and weighing the blood is systematically pursued. The method used in these 2700 cases was to place a basin just below the vaginal outlet immediately after the birth of the child and to hold it there till after the placenta was born and all active hæmorrhage ceased; the blood thus caught, together with any blood found in the bag of membranes, was at once weighed and noted as "weighed blood." As it was impossible often to catch *all* the blood, an estimate was made as accurately as possible of the amount lost on the sheets and in the douche; this amount of "estimated blood" added to the "weighed blood" was recorded as the "total blood-loss." In the tables given below the amounts, stated in ounces, refer to the "total blood-loss."

Twenty-two hundred and nine (81.8%) of the 2700 patients had a "natural blood-loss" and 491 (18.2%) had a "hæmorrhage" of more or less severity. The cases of "natural blood-loss" will be studied first, then the "hæmorrhages." In order to avoid repetition, relative frequency and relative quantity of hæmorrhage will be studied together.

Relation of Placental Births to "Natural Blood-Losses."

In 2093 of the 2209 cases of "natural blood-loss" the placentæ were expressed by the Credé method and in 116 the placentæ were born spontaneously.

Credé Expression (2093 Cases).

It is a curious fact that no blood at all was lost in three cases, in all of which the placentæ were expressed fœtal surface out by the Credé method:

1. X para, full term; placenta born edge first fœtal surface out; 3d stage = 15 min.

2. I para, premature (8½ mos): placenta born fœtal surface first and out; 3d stage = 15 min.

3. X para, premature (7½ mos): placenta born fœtal surface first and out; 3d stage = 15 min.

In order to show the "natural blood-loss" for each method of placental birth in the four classes of cases, the following tabulation has been made:

TABLE 41.

	full term. I parœ,	*premature. I parœ,*	*full term. X parœ,*	*premature. X parœ,*
Plac. No. 1..	371 lost 2884 oz.	46 lost 263 oz.	349 lost 2541 oz.	28 lost 175 oz.
Plac. No. 2..	266 lost 1979 oz.	42 lost 233 oz.	281 lost 2031 oz.	29 lost 158 oz.
Plac. No. 3..	170 lost 1448 oz.	34 lost 236 oz.	187 lost 1454 oz.	27 lost 150 oz.
Plac. No. 4..	43 lost 376 oz.	20 lost 114 oz.	72 lost 567 oz.	19 lost 104 oz.
Plac. No. 5..	55 lost 388 oz.	8 lost 50 oz.	40 lost 304 oz.	6 lost 32 oz.

From the above the following table has been prepared to show the *total* and *average* "natural blood-loss" in each class of cases and the *average for the Credé method*:

TABLE 42.

905 I parœ, full term, lost.....7075 oz., *i. e.*, an average of.....7.8 oz.
150 I parœ, premature lost..... 896 oz., *i. e.*, an average of.....6.0 oz.
929 X parœ, full term, lost.....6897 oz., *i. e.*, an average of.....7.4 oz.
109 X parœ, premature, lost 619 oz., *i. e.*, an average of.....5.7 oz.

2093 patients lost.....15487 oz., *i. e.*, an average of.....7.4 oz.

In order to determine what influence *each method of placental birth* has upon the amount of blood lost, the following table has been formulated:

TABLE 43.

Patients.	*oz.*		*oz.*
794	lost 5863	(ave. = 7.4)	when plac. born edge first, fœtal surface out.
618	lost 4401	(ave. = 7.1)	when plac. born fœtal surface first and out.
418	lost 3288	(ave. = 7.9)	when plac. born edge first, maternal surface out.
154	lost 1161	(ave. = 7.5)	when plac. born maternal surface first and out.
109	lost 774	(ave. = 7.1)	when plac. born edge first.

This table shows that the *greatest "natural blood-loss"* in Credé cases occurs when the placentæ are born *edge first, maternal surface out*, and that the smallest losses occur when the fœtal surface is born first and out or the edge first.

Spontaneous Expression (116 Cases).

The following table shows the "natural blood-loss," which occurred with each method of placental birth in the different classes of cases:

TABLE 44.

	I parœ, full term.	*I parœ, premature.*	*X parœ, full term.*	*X parœ, premature.*
Plac. No. 1..	9 lost 63 oz.	1 lost 2 oz.	19 lost 114 oz.	5 lost 7 oz.
Plac. No. 2..	4 lost 27 oz.	0 lost 0 oz.	14 lost 73 oz.	2 lost 8 oz.
Plac. No. 3..	9 lost 58 oz.	2 lost 13 oz.	21 lost 121 oz.	8 lost 44 oz.
Plac. No. 4..	0 lost 0 oz.	2 lost 13 oz.	11 lost 61 oz.	3 lost 17 oz.
Plac. No. 5..	0 lost 0 oz.	1 lost 1 oz.	5 lost 34 oz.	0 lost 0 oz.

The table below is arranged to show the *total* and *average* "natural blood-loss" in each class of cases, and the *average for the spontaneous method* of expression:

TABLE 45.

22 I paræ, full term, lost 148 oz., i. e., an average of 6.7 oz.
6 I paræ, premature, lost 29 oz., i. e., an average of 4.8 oz.
70 X paræ, full term, lost 403 oz., i. e., an average of 5.8 oz.
18 X paræ, premature, lost 76 oz., i. e., an average of 4.2 oz.

116 patients lost.....656 oz., i. e., an average of 5.7 oz.

The influence of *each method of placental birth* upon the quantity of blood lost is thus shown:

TABLE 46.

Patients.	*oz.*	*oz.*	
34	lost 186	(average 5.5)	when plac. born edge first fœtal surface out.
20	lost 108	(average 5.4)	when plac. born fœtal surface first and out.
40	lost 236	(average 5.9)	when plac. born edge first maternal surface out.
16	lost 91	(average 5.7)	when plac. born maternal surface first and out.
6	lost 35	(average 5.8)	when plac. born edge first.

This table shows that the *greatest "natural blood-loss"* in spontaneous cases occurs when the placentæ are born *edge first, maternal surface out,* and the smallest when the placentæ are born fœtal surface first and out.

Credé and Spontaneous Expression.

The following table, which has been arranged from previous lists in order to facilitate comparison, shows that, on an average, the "natural blood loss" is nearly 2 ounces more in the Credé than in the spontaneous cases for all methods of placental birth.

TABLE 47.

Credé Average.	*Spontan. Average.*	
7.4 oz.	5.5 oz.	when plac. born edge first fœtal surface out.
7.1 oz.	5.4 oz.	when plac. born fœtal surface first and out.
7.9 oz.*	5.9 oz.	when plac. born edge first maternal surface out.
7.5 oz.	5.7 oz.	when plac. born maternal surface first and out.
7.1 oz.	5.8 oz.	when plac. born edge first.

This establishes the fact that, so far as the quantity of blood lost is concerned, it is of advantage to the patient to have the placenta expressed spontaneously rather than by the Credé method.

It is to be remembered that only those spontaneous cases in which the placentæ came away within twenty minutes after the birth of the child are reported in this paper and compared with Credé cases in which the placentæ were expressed also within twenty minutes after the birth of the child. In most cases a spontaneous third stage lasts longer than twenty minutes, and the longer the third stage, the greater will be the loss of blood. This is verified by several observers, e. g., Winckel states that the average length of the spontaneously-ended third stage is 2 to 2½ hours (No. 1), and that the average blood-loss in these cases is about 7 oz. (No. 2). Ahlfeld, quoted by Winckel (No. 2), gives 257 g. (8 oz) as the average blood-loss in spontaneous cases.

The following table, which combines the Credé and spontaneous cases, just as we see them *clinically*, shows the *total* and *average* loss for the five methods of placental birth and the *average for all placental births*:

TABLE 48.

Natural Blood-Loss—Clinical Average.

Patients.	*oz.*	*oz.*	
828	lost 6049	(ave. 7.3)	when plac. born edge first fœtal surface out.
638	lost 4509	(ave. 7.1)	when plac. born fœtal surface first and out.
458	lost 3524	(ave. 7.7)	when plac. born edge first maternal surface out.
170	lost 1252	(ave. 7.4)	when plac. born maternal surface first and out.
115	lost 809	(ave. 7.0)	when plac. born edge first.
2209	lost 16143	(ave. 7.3)	= average for all placental births.

The above list shows that the *average loss is greatest*, when the placenta is born *edge first, maternal surface out*, and least, when it is born edge first; it also shows that, *when the maternal surface is born out, the "natural loss of blood" is greater* than when the fœtal surface is born out.

No. 1.—Winckel—Lehrbuch der Geburtshülfe, 1889, p. 139.
No. 2.—Op. cit. p. 138.

A comparison of the *relative frequency* of the different placental births, as they occurred in cases of "natural blood-loss," with what may be called the "normal relative frequency," shows that Plac. No. 1 occurred a little less frequent than normal, but that the frequency of Plac. No. 2 was considerably above normal (2%), while the frequency of Plac. No. 3 and Plac. No. 4 was less than normal:

TABLE 49.

Natural Blood-Loss. Relative Frequency		*Normal Relative Frequency*		
828 = 37.5 %	66.4 %	37.9 %	64.8 %	when plac. born edge first fœtal surface out.
638 = 28.9 %		26.9 %		when plac. born fœtal surface first and out.
458 = 20.7 %	28.4 %	22.2 %	30.2 %	when plac. born edge first mat'l surface out.
170 = 7.7 %		8.0 %		when plac. born maternal surface first and out.
115 = 5.2 %		5.0 %		when plac. born edge first.

The above shows that in cases of "natural blood-loss" the fœtal surface is born out with more than normal frequency.

That relatively more cases of "normal blood-loss" occur, when the Credé method is used than when the placentæ come away spontaneously within twenty minutes after the child's birth, is demonstrated by these figures:

Twenty hundred and ninety-three (=82%) "natural blood-losses," occurred in 2553 Credé cases; 116 (=78.9%) "natural blood-losses" occurred in 147 spontaneous cases, i. e., 3.1% in favor of the Credé method.

Maturity and Prematurity.

It is a natural inference that full term cases must lose more blood than premature, if we consider the richer blood-supply of the uterus and its greater size at full term. The following table shows that this is true for all five methods of placental birth:

TABLE 50.

Full Term.			*Premature.*			
Cases.	*oz.*	*oz.*	*Cases.*	*oz.*	*oz.*	
748	lost 5602	(ave. 7.5)	80	lost 447	(ave. 5.6)	in cases of Plac. No. 1.
565	lost 4110	(ave. 7.3)	73	lost 399	(ave. 5.5)	in cases of Plac. No. 2.
387	lost 3081	(ave. 8.0)	71	lost 443	(ave. 6.2)	in cases of Plac. No. 3.
126	lost 1004	(ave. 8.0)	44	lost 248	(ave. 5.6)	in cases of Plac. No. 4.
100	lost 726	(ave. 7.3)	15	lost 83	(ave. 5.5)	in cases of Plac. No. 5.
1926	lost 14523	(ave. 7.5)	283	lost 1620	(ave. 5.7)	

Primiparity and Multiparity.

The general tendency of primiparity to cause more "natural blood-loss" than multiparity is brought out in the following table:

TABLE 51.

I parœ.			*X parœ.*			
Cases.	*oz.*	*oz.*	*Cases.*	*oz.*	*oz.*	
427	lost 3212	(ave. 7.5)	401	lost 2837	(ave. 7.1)	in cases of Plac. No. 1.
312	lost 2239	(ave. 7.2)	326	lost 2270	(ave. 7.0)	in cases of Plac. No. 2.
215	lost 1755	(ave. 8.2)	243	lost 1769	(ave. 7.3)	in cases of Plac. No. 3.
65	lost 503	(ave. 7.7)	105	lost 749	(ave. 7.1)	in cases of Plac. No. 4.
64	lost 439	(ave. 6.9)	51	lost 370	(ave. 7.3)	in cases of Plac. No. 5.
1083	lost 8148	(ave. 7.5)	1126	lost 7995	(ave. 7.1)	

The above shows that primiparity increases the "natural blood-loss" for all forms of placental birth except for Plac. No. 5. The very slight variation in the averages for multiparæ is noteworthy.

Relation of Placental Births to "Hæmorrhages."

Four hundred and ninety-one (18.2%) of the 2700 patients had a "hæmorrhage," according to the definition of this word already adopted—a total blood-loss of over 16 oz. or an escape of blood furious enough to need treatment. Study of these 491 hæmorrhages shows that they can be conveniently divided into 5 groups, according to the time and manner of the hæmorrhage:

Group A: Hæmorrhage during the 3d stage, ending with birth of placenta.

Group B: Hæmorrhage first apparent when the placenta is born.

Group C: Hæmorrhage in the 3d stage, necessitating *early* expression of the placenta.

Group D: Hæmorrhage beginning in the 3d stage and continuing after the birth of the placenta as a "post-partum hæmorrhage."

Group E: Hæmorrhage beginning after birth of the placenta ("post-partum," as used in this paper, means "after birth" of the placenta).

Groups A, B and C, therefore, are really three kinds of third-stage hæmorrhage; Group D is partly third-stage and partly post-partum hæmorrhage; and Group E is wholly post-partum hæmorrhage. A more complete description of the characteristics of the groups will be

given as each group in turn is studied with special reference to the ways in which the placentæ are born, when these hæmorrhages occur.

It is well worthy of note that no one of the 491 patients lost her life either immediately or remotely because of hæmorrhage. The largest hæmorrhage reported in the subjoined lists was 54 oz., most of which was lost in one minute post-partum.

The following list shows the number of cases of each kind of hæmorrhage and its relative frequency:

TABLE 52.

268 =	9.9 %	were Group A hæmorrhages.
78 =	2.9 %	were Group B hæmorrhages.
99 =	3.7 %	were Group C hæmorrhages.
34 =	1.3 %	were Group D hæmorrhages.
12 =	0.4 %	were Group E hæmorrhages.
491 =	18.2 %	in 2700 labors.

The following is a comparison of the *relative frequency of placental births in hæmorrhage cases* with the normal relative frequency of placental births:

TABLE 53.

(Compare Table 49.)

Relative Frequency in Hæmorrhages.	*Normal Relative Frequency.*
287 = 58.5 %	64.8 % when placentæ born fœtal surface out.
184 = 37.5 %	30.2 % when placentæ born maternal surface out.
20 = 4.0 %	5.0 % when placentæ born edge first.

From this we see that the relative frequency of the birth of the fœtal surface out and of edge first is less than normal in hæmorrhage cases, i. e., the *frequency of hæmorrhage is increased by the birth of the maternal surface out.*

Of the 491 hæmorrhages 460 (18%) occurred in the 2553 cases of Credé expression and 31 (21.1%) occurred in the 147 cases of spontaneous expression, i. e., *spontaneous expression of the placenta increases the frequency of hæmorrhage.*

"Group A" Hæmorrhages.

This group comprises 268 cases, in each of which *more than* 16 *ounces of blood were lost*—little or no blood followed the birth of the

child, but during the third stage a few ounces trickled out and then with the expression of the placenta at the usual time (15 to 20 minutes after the child's birth) enough more blood came away to make the total loss over 16 ounces. In all of these cases there was not enough blood being lost during the third stage to render interference necessary and the uterus contracted immediately after the birth of the placenta so firmly that there was no post-partum hæmorrhage. When the quantity of blood lost was large, it occurred in this way—a little too much escaped in the third stage, but not enough to demand treatment, then with the birth of the secundines a much larger amount than usual was expressed, but, as the uterus contracted well, no treatment was needed.

That this kind of third stage hæmorrhage is relatively more frequent in spontaneous than in Credé cases is shown by the fact that while 248 "Group A" hæmorrhages occurred in 2553 Credé cases (9.7%), 20 "Group A" hæmorrhages occurred in 147 spontaneous cases (13.6%).

The following table shows the number of these hæmorrhages in each of the four classes of patients, both for Credé and for spontaneous expression, as well as the *total* and *average amount of blood lost*; it also shows that the *quantity of blood lost* was on an average just the *same for the Credé as for the spontaneous* cases:

TABLE 54.

123	I paræ, full term, Credé,	lost	2459	oz., i. e., an average of	20.0	oz.
11	I paræ, premature, Credé,	lost	208	oz., i. e., an average of	18.9	oz.
103	X paræ, full term, Credé,	lost	2077	oz., i. e., an average of	20.2	oz.
11	X paræ, premature, Credé,	lost	249	oz., i. e., an average of	22.6	oz.
248	patients, Credé expres.,	lost	4993	oz., i. e., an average of	20.1	oz.
3	I paræ, full term, spont.,	lost	62	oz., i. e., an average of	20.7	oz.
2	I paræ, premature, spont.,	lost	38	oz., i. e., an average of	19.0	oz.
14	X paræ, full term, spont.,	lost	283	oz., i. e., an average of	20.2	oz.
1	X para, premature, spont.,	lost	19	oz., i. e., an average of	19.0	oz.
20	patients, spontan. expres.,	lost	402	oz., i. e., an average of	20.1	oz.

The following two tables show how much hæmorrhage occurred with each method of placental birth in the different classes of cases:

TABLE 55.

Credé	*I parœ, full term.*	*I parœ, premature.*	*X parœ, full term.*	*X parœ, premature.*
Plac. No. 1.....	55 lost 1096 oz.	3 lost 55 oz.	47 lost 941 oz.	4 lost 84 oz.
Plac. No. 2.....	26 lost 495 oz.	2 lost 35 oz.	15 lost 286 oz.	3 lost 62 oz.
Plac. No. 3.....	28 lost 586 oz.	3 lost 53 oz.	29 lost 595 oz.	2 lost 40 oz.
Plac. No. 4.....	11 lost 216 oz.	2 lost 42 oz.	7 lost 153 oz.	1 lost 45 oz.
Plac. No. 5.....	3 lost 66 oz.	1 lost 23 oz.	5 lost 102 oz.	1 lost 18 oz.

TABLE 56.

Spontan.	*I parœ, full term.*	*I parœ, premature.*	*X parœ, full term.*	*X parœ, premature.*
Plac. No. 1.....	3 lost 62 oz.	0 lost 0 oz.	4 lost 85 oz.	1 lost 19 oz.
Plac. No. 2.....	0 lost 0 oz.	0 lost 0 oz.	5 lost 98 oz.	0 lost 0 oz.
Plac. No. 3.....	0 lost 0 oz.	2 lost 38 oz.	3 lost 62 oz.	0 lost 0 oz.
Plac. No. 4.....	0 lost 0 oz.	0 lost 0 oz.	2 lost 38 oz.	0 lost 0 oz.
Plac. No. 5.....	0 lost 0 oz.	0 lost 0 oz.	0 lost 0 oz.	0 lost 0 oz.

The following is the *total* and *average blood-loss* for each of the five methods of placental birth and the average for this group of hæmorrhages; Credé and spontaneous cases combined:

TABLE 57.

Patients.	*oz.*	*oz.*	
117 lost	2342	(ave. 20.2)	when plac. born edge first fœtal surface out.
51 lost	976	(ave. 19.1)	when plac. born fœtal surface first and out.
67 lost	1374	(ave. 20.5)	when plac. born edge first maternal surface out.
23 lost	494	(ave. 21.5)	when plac. born maternal surface first and out.
10 lost	209	(ave. 20.9)	when plac. born edge first.
268 lost	5395	(ave. 20.1)	for this group.

This shows that the *greatest hæmorrhage* occurred when the *maternal surface was born first and out* and the smallest when the fœtal surface was born first and out.

The following table shows that the *birth of the maternal surface out causes more hæmorrhage* than does the birth of the fœtal surface out and that the *maternal surface is born out with greater relative frequency* than is normal:

TABLE 58.

"Group A" *Relative Frequency.*	*oz.*	*oz.*	*Normal Rel. Freq.*	
168 (= 62.7 %) lost	3318	(ave. 19.8)	64.8 %	when plac. born fœtal surface out.
90 (= 33.6 %) lost	1868	(ave. 20.8)	30.2 %	when plac. born mat'l surface out.
10 (= 3.7 %) lost	209	(ave. 20.9)	5.0 %	when plac. born edge first.

"Group B" Hæmorrhages.

This group of 78 cases is characterized by having practically *all the blood come away with the secundines;* no blood at all escapes externally after the birth of the child or during the third stage, but, on expressing the placenta at the usual time (either Credé or spontaneously within 15 to 20 minutes after child's birth), a large quantity of clotted and fluid blood, which has collected in the uterus during the third stage, is born with the placenta, or, what is more common, in the bag of membranes which immediately follows the placenta. As soon as the secundines and blood are expressed, the uterus contracts well, so that there is no post-partum hæmorrhage and, therefore, no need of treatment. This variety of hæmorrhage often occurs in cases in which there is a good bag of membranes and is less apt to occur, if the membranes are so badly torn that there is no bag to hold the blood. As placentæ born edge first, fœtal surface out, and fœtal surfaces first and out are more apt to have well-formed bags of membrane (inverted). These methods of placental birth would tend to favor this kind of hæmorrhage—that this is true will be demonstrated.

As 71 of these cases occurred in the 2553 cases of Credé expression, i. e., 2.8%, and 7 in the 147 cases of spontaneous expression, i. e., 4.8%, it is evident that *this kind of hæmorrhage is relatively more frequent in spontaneous cases.*

The following table of Credé and spontaneous cases combined shows how much blood was lost with each method of placental birth by the four classes of patients:

TABLE 59.

	I paræ, full term.	*I paræ, premature.*	*X paræ, full term.*	*X paræ, premature.*
Plac. No. 1.....	18 lost 501 oz.	1 lost 26 oz.	13 lost 359 oz.	0 lost 0 oz.
Plac. No. 2.....	14 lost 361 oz.	0 lost 0 oz.	7 lost 181 oz.	2 lost 63 oz.
Plac. No. 3.....	8 lost 205 oz.	0 lost 0 oz.	4 lost 110 oz.	0 lost 0 oz.
Plac. No. 4.....	1 lost 28 oz.	1 lost 26 oz.	5 lost 151 oz.	1 lost 28 oz.
Plac. No. 5.....	2 lost 41 oz.	0 lost 0 oz.	1 lost 21 oz.	0 lost 0 oz.

The following tables show the *total* and *average blood-losses* in each class of cases and the *average for the Credé and spontaneous* methods:

TABLE 60.

40	I	paræ, full term,	Credé, lost	1073 oz.,	i. e., an average of 26.8 oz.
1	I	para, premature,	Credé, lost	26 oz.,	i. e., an average of 26.0 oz.
27	X	paræ, full term,	Credé, lost	727 oz.,	i. e., an average of 26.9 oz.
3	X	paræ, premature,	Credé, lost	91 oz.,	i. e., an average of 30.3 oz.
71	patients,	Credé expression,	lost	1917 oz.,	i. e., an average of 27.0 oz.

TABLE 61.

Spontaneous Expression.

3	I	paræ, full term,	lost	63 oz.,	i. e., an average of 21.0 oz.
1	I	para, premature,	lost	26 oz.,	i. e., an average of 26.0 oz.
3	X	paræ, full term,	lost	95 oz.,	i. e., an average of 31.7 oz.
0	X	paræ, premature,	lost	0	
7	patients	lost.....		184 oz.,	i. e., an average of 26.3 oz.

Comparison of the above averages show that the hæmorrhages were *less copious in the spontaneous* than in the Credé cases.

Below is the *total* and *average blood-loss* for each method of placental birth and the *average for the group*:

TABLE 62.

Cases.	*oz.*	*oz.*	
32	lost 886	(ave. 27.7)	when plac. born edge first fœtal surface out.
23	lost 605	(ave. 26.3)	when plac. born fœtal surface first and out.
12	lost 315	(ave. 26.2)	when plac. born edge first maternal surface out.
8	lost 233	(ave. 29.2)	when plac.born maternal surface first and out.
3	lost 62	(ave. 20.7)	when plac. born edge first.
78	lost 2101	(ave. 26.9)	for this group.

The above shows that the *most profuse hæmorrhages occurred when the placentæ were born maternal surface first and out,* and the smallest when they were born edge first.

That the average *loss was larger when the maternal surface was born out* than when the fœtal surface was born out and that the *birth of the fœtal surface out* was much *more frequent* than normal is thus shown:

TABLE 63.

Normal Relative Frequency	*"Group B" Relative Frequency*	*oz.*	*oz.*
64.8 %	55 (= 70.5%) lost	1491	(ave. 27.1) when plac. born fœtal surf. out.
30.2 %	20 (= 25.6%) lost	548	(ave. 27.4) when plac. born mat'l surf. out.
5.0 %	3 (= 3.9%) lost	62	(ave. 20.7) when plac. born edge first.

"Group C" Hæmorrhages.

In each of the 99 cases of this group there was either a ***sudden gush*** of blood in the third stage (more or less than 16 oz.), necessitating immediate emptying of the uterus, or such a *large slow escape* of blood in the third stage that it was necessary to express the placenta earlier than usual, i. e., in all these cases the *placenta was expressed early* by the Credé method because of the "hæmorrhage." In every case the uterus contracted well and the "hæmorrhage" ceased, as soon as this treatment (early expression) was resorted to. There were, of course, no spontaneous cases in this group. As these 99 hæmorrhages occurred in the 2553 Credé cases, the frequency was 3.9 %.

The following arrangement shows how much blood was lost with each method of placental birth in the four classes of cases:

TABLE 64.

	I paræ, full term.	*I paræ, premature.*	*X paræ, full term.*	*X paræ, premature.*
Plac. No. 1.....	13 lost 229 oz.	2 lost 27 oz.	15 lost 303 oz.	3 lost 36 oz.
Plac. No. 2.....	6 lost 106 oz.	0 lost 0 oz.	7 lost 138 oz.	0 lost 0 oz.
Plac. No. 3.....	14 lost 241 oz.	1 lost 14 oz.	19 lost 283 oz.	6 lost 93 oz.
Plac. No. 4.....	0 lost 0 oz.	2 lost 35 oz.	6 lost 91 oz.	1 lost 26 oz.
Plac. No. 5.....	1 lost 19 oz.	0 lost 0 oz.	3 lost 44 oz.	0 lost 0 oz.

The table below shows the total and average quantity of blood lost by each class of patients and the average loss of each patient of this group:

TABLE 65.

34 I paræ, full term, lost 595 oz., i. e., an average of 17.5 oz.
5 I paræ, premature, lost 76 oz., i. e., an average of 15.2 oz.
50 X paræ, full term, lost 859 oz., i. e., an average of 17.2 oz.
10 X paræ, premature, lost 155 oz., i. e., an average of 15.5 oz.

99 patients lost.....1685 oz., i. e., an average of 17.0 oz.

The *total* and *average "hæmorrhage"* for each method of placental birth, showing that the *greatest amount of blood was lost*, when the placenta was born *fœtal surface first and out*, and least, when it was born edge first, is given below:

TABLE 66.

Cases.	*oz.*	*oz.*	
33 lost	595 (ave.	18.0)	when plac. born edge first, fœtal surface out.
13 lost	244 (ave.	18.8)	when plac. born fœtal surface first and out.
40 lost	631 (ave.	15.8)	when plac. born edge first maternal surface out.
9 lost	152 (ave.	16.9)	when plac. born maternal surface first and out.
4 lost	63 (ave.	15.7)	when plac. born edge first.

The following table shows that the average *"hæmorrhage" was much larger* when the *fœtal surface was born out*, but that the *maternal surface* was born out with nearly *twice as great relative frequency* as is normal:

TABLE 67.

Normal Relative Frequency in Credé Cases.	*"Group C" Relative Frequency*			
		oz.	*oz.*	
65.6 %	46 (= 46.5 %) lost	839	(ave. 18.2)	when fœtal surface born out.
29.3 %	49 (= 49.4 %) lost	783	(ave. 16.0)	when maternal surface born out.
5.1 %	4 (= 4.1 %) lost	63	(ave. 15.7)	when born edge first.

If "Group B" and "Group C" hæmorrhages are compared, a marked opposite tendency is at once noticed, viz.: in "Group B" birth of the fœtal surface out increases the relative frequency and birth of the maternal surface out increases the relative quantity of the hæmorrhage, whereas, in "Group C" birth of the fœtal surface out increases the relative quantity and birth of the maternal surface out increases the relative frequency of the hæmorrhage. A reason for this is evident, if we recognize the importance of the presence or absence of a bag of membranes in each of these hæmorrhages respectively—"Group B" hæmorrhages are favored by the presence of a well-formed bag of membranes, which collects and holds the blood, but "Group C" hæmorrhages are favored by the absence of such a bag, whereby early escape of the blood is permitted. As better bags of membranes form, when the fœtal surface is born out, "Group B" hæmorrhages are relatively more frequent with this form of placental birth; as bags of membranes are more often absent or badly torn, when the maternal surface is born out,

"Group C" hæmorrhages are more frequent with this method of placental birth.

"Group D" Hæmorrhages.

In the 34 cases of this group the *"hæmorrhage" began in the third stage and continued after the birth of the secundines* as a post-partum hæmorrhage which required treatment. In some of these cases the placenta was expressed early because of "hæmorrhage," i. e., some began like the hæmorrhages in "Group C" and were treated in the same way, but emptying of the uterus failed to check this "hæmorrhage;" in other cases the "hæmorrhage" did not begin, or at least did not become visible, till an attempt was made at the usual time to express the placenta, i. e., these began like the hæmorrhages in "Group B," but emptying of the uterus failed to check this "hæmorrhage."

Three of these hæmorrhages occurred with spontaneous birth of the placenta. These three lost 95 oz. of blood—an average of 31.7 oz. each, which is considerably larger than the average for the other 31 Credé cases (28.4 oz. each). As there were 3 of these hæmorrhages in 147 spontaneous cases (2%) and 31 in the 2553 Credé cases (1.2%), the *relative frequency is greater*, when placentæ are born *spontaneously.*

TABLE 68.

Credé and Spontan.	*I parœ, full term.*	*I parœ, premature.*	*X parœ, full term.*	*X parœ, premature.*
Plac. No. 1.....	6 lost 138 oz.	0 lost 0 oz.	5 lost 167 oz.	0 lost 0 oz.
Plac. No. 2.....	0 lost 0 oz.	0 lost 0 oz.	2 lost 41 oz.	0 lost 0 oz.
Plac. No. 3.....	7 lost 211 oz.	0 lost 0 oz.	9 lost 256 oz.	0 lost 0 oz.
Plac. No. 4.....	1 lost 34 oz.	0 lost 0 oz.	1 lost 29 oz.	0 lost 0 oz.
Plac. No. 5.....	0 lost 0 oz.	1 lost 32 oz.	2 lost 66 oz.	0 lost 0 oz.

The above table shows the number of cases and the quantity of hæmorrhage for each method of placental birth in the four classes of patients.

In the following list are given the total and average amounts of blood lost by each class of patients and the average for all 34 cases:

TABLE 69.

14 I parœ, full term, lost 383 oz., i. e., an average of 27.4 oz.
1 I para, premature, lost 32 oz., i. e., an average of 32.0 oz.
19 X parœ, full term, lost 559 oz., i. e., an average of 29.4 oz.
0 X parœ, premature, lost 0

34 patients lost.....974 oz., i. e., an average of 28.6 oz.

The *total* and *average quantity of hæmorrhage* for the five placental births was as follows:

TABLE 70.

Cases.	*oz.*	*oz.*	
11 lost	305	(ave. 27.7)	when plac. born edge first fœtal surface out.
2 lost	41	(ave. 20.5)	when plac. born fœtal surface first and out.
16 lost	467	(ave. 29.2)	when plac. born edge first maternal surface out.
2 lost	63	(ave. 31.5)	when plac. born maternal surface first and out.
3 lost	98	(ave. 32.7)	when plac. born edge first.

The following table shows that the *birth of the maternal surface out greatly increases the amount of blood lost* in these cases, as *well as their relative frequency*:

TABLE 71.

Normal Relative Frequency	*"Group D" Relative Frequency*	
64.8 %	13 (= 38.2 %)	lost 346 oz. (ave. 26.6 oz.) when fœtal surface born out.
30.2 %	18 (= 53.0 %)	lost 530 oz. (ave. 29.4 oz.) when mat'l surface born out.
5.0 %	3 (= 8.8 %)	lost 98 oz. (ave. 32.7 oz.) when born edge first.

"Group E" Hœmorrhages.

The 12 cases of this group were *strictly post-partum*, i. e., the "hæmorrhage" did not begin until after the birth of the placenta. The "hæmorrhage" in every case was so large or so furious that very vigorous treatment was needed to check it. Six of these hæmorrhages were due wholly to failure of the uterus to contract well, 5 were due to uterine relaxation and increased by retention and then extraction of the chorion, and 1 was due to uterine relaxation, but part of the blood came from the badly torn cervix, i. e., *failure of the uterus to contract firmly was a constant factor* in all these cases.

One case occurred after a spontaneous birth of the placenta. One in 147 is 0.7%, and 11 occurred after 2553 Credé expressions (0.4%). The spontaneous case lost 48 oz.

The quantity of blood lost by each class of patients for each method of placental birth is stated below:

TABLE 72.

Credé and Spontan.	*I paræ, full term.*	*I paræ, premature.*	*X paræ, full term.*	*X paræ, premature.*
Plac. No. 1.....	3 lost 76 oz.	0 lost 0 oz.	0 lost 0 oz.	0 lost 0 oz.
Plac. No. 2.....	1 lost 21 oz.	0 lost 0 oz.	1 lost 48 oz.	0 lost 0 oz.
Plac. No. 3.....	2 lost 46 oz.	2 lost 45 oz.	2 lost 67 oz.	0 lost 0 oz.
Plac. No. 4.....	1 lost 30 oz.	0 lost 0 oz.	0 lost 0 oz.	0 lost 0 oz.
Plac. No. 5.....	0 lost 0 oz.	0 lost 0 oz.	0 lost 0 oz.	0 lost 0 oz.

The folloing table gives the *total* and *average blood-loss* in the different classes of cases and the average for this group:

TABLE 73.

7 I paræ, full term, lost 173 oz., i. e., an average of 24.7 oz.
2 I paræ, premature, lost 45 oz., i. e., an average of 22.5 oz.
3 X paræ, full term, lost 115 oz., i. e., an average of 38.3 oz.
0 X paræ, premature, lost 0

12 patients lost.....333 oz., i. e., an average of 27.7 oz.

The large average loss of X paræ is noteworthy.

In the following table are given the *total* and *average losses* for each method of placental birth:

TABLE 74.

Cases.	*oz.*	*oz.*	
3 lost	76	(ave. = 25.3)	when plac. born edge first fœtal surface out.
2 lost	69	(ave. = 34.5)	when plac. born fœtal surface first and out.
6 lost	158	(ave. = 26.3)	when plac. born edge first maternal surface out.
1 lost	30	(ave. = 30.0)	when. plac. born maternal surface first and out.
0 lost	0	()	when plac. born edge first.

From the following arrangement it is evident that *more blood is lost* in a "post-partum hæmorrhage," if the placenta has been born *fœtal surface out*, but that these hæmorrhages are *much more frequent* when the *maternal surface* is born out:

TABLE 75.

Normal Relative Frequency	*"Group E" Relative Frequency*	*oz.*	*oz.*	
64.8 %	5 (= 41.7)%)	lost 145	(ave. = 29.)	when fœtal surface born out.
30.2 %	7 (= 58.3 %)	lost 188	(ave. = 26.9)	when mat'l surface born out.

This shows that the actual frequency was greater and the relative

frequency nearly twice as great as usual, when the maternal surface was born out.

Having completed the study of the characteristics of each of the five varieties of "hæmorrhage," which may occur in the third stage or immediately post-partum, only general facts concerning ***all these "hæmorrhages" taken together with all forms of placental birth*** remain for investigation.

It has already been shown that the *frequency* of "hæmorrhages" in general is increased by the maternal surface being born out. The following table shows that the average *quantity* of "hæmorrhage" is *slightly greater* when the *fœtal surface* is born out, and ***still greater*** when the *edge is born first*:

TABLE 76.

Cases.	*oz.*	*oz.*	
287 lost	6139	(average = 21.4)	when fœtal surface born out.
184 lost	3917	(average = 21.3)	when maternal surface born out.
20 lost	432	(average = 21.6)	when born edge first.
491 lost	10488	(average = 21.4)	= an average "hemorrhage."

The statements made already prove that, when placentæ are born *spontaneously* within 15 to 20 minutes after the child's birth, *"hæmorrhages" are more frequent* than when the placentæ are expressed by the *Credé method*. The table below, giving the average amount of blood lost in all the spontaneous and in all the Credé cases when all methods of placental birth are taken together, shows that the *quantity of "hæmorrhage" is greater for the spontaneous* than for the Credé method:

TABLE 77.

31	spontaneous cases lost	729 oz., i. e., an average of 23.5 oz.
460	Credé cases lost	9759 oz., i. e., an average of 21.2 oz.

As regards other factors which have more or less influence upon the frequency and quantity of "hæmorrhage," the following tables show that, in general, "hæmorrhages" are *more frequent and larger in full term labors* than in premature, and that, in general, *more "hæmorrhages" occur in primiparæ* than in multiparæ, but that *multiparæ lose a little more blood* than do primiparæ:

TABLE 78.

(No. 1.)

No. 1.—Deduced from Table 35, p. 38.

Normal Relative Frequency	*Relative Frequency in "Hæmorrhage" Cases.*
87.7 %	443 (= 90.2 %) *full term* cases lost 9523 oz.; average = 21.5 oz.
12.3 %	48 (= 9.8 %) *premature* cases lost 965 oz.; average = 20.1 oz.

TABLE 79.

(No. 2.)

No. 2.—Deduced from Table 37.

Normal Relative Frequency	*Relative Frequency in "Hæmorrhage" Cases.*
49.2 %	247 (= 50.3 %) I paræ, lost 5259 oz.; average = 21.3 oz.
50.8 %	244 (= 49.7 %) X paræ, lost 5229 oz.; average = 21.4 oz.

Now that the relations of placental births to "natural blood-losses" and to "hæmorrhages" have been studied, a conclusion as to the *relative quantity of hæmorrhage*, which occurred with *each method of placental birth*, can be reached by comparing the average blood-losses of the 2700 cases:

TABLE 80.

Total and Average Hæmorrhages in 2,700 Labors for the Five Methods of Placental Birth.

Patients.	*oz.*	*oz.*	
1024 lost	10253	(ave. = 10.0)	when plac. born edge first fœtal surface out.
729 lost	6444	(ave. = 8.8)	when plac. born fœtal surface first and out.
599 lost	6469	(ave. = 10.8)	when plac. born edge first mat'l surface out.
213 lost	2224	(ave. = 10.4)	when plac. born maternal surface first and
135 lost	1241	(ave. = 9.2)	when plac. born edge first.

By rearranging the above averages we obtain the following order of placental births:

TABLE 81.

Average loss when plac. born edge first maternal surface out....10.8 oz.—most.
Average loss when plac. born maternal surface first and out.....10.4 oz.
Average loss when plac. born edge first fœtal surface out.....10.0 oz.
Average loss when plac. born edge first..... 9.2 oz.
Average loss when plac. born fœtal surface first and out..... 8.8 oz.—least.

Résumé of Study II.

In this study it has been proved that: 1. The *average "natural blood-loss" for the different methods of placental birth,* when the *Credé method* of expression is used, is as follows:

Average for plac. born edge first, maternal surface out, 7.9 oz.—most.

Average for plac. born maternal surface first and out, 7.5 oz.

Average for plac. born edge first, fœtal surface out, 7.4 oz.

Average for plac. born fœtal surface first and out, 7.1 oz.—least.

Average for plac. born edge first, 7.1 oz.—least.

2. The *average "natural blood-loss" is 7.4 oz.,* when the placenta is expressed by the *Credé method* within 20 minutes after the child's birth.

3. The *average "natural blood-loss" for the different methods of placental birth,* when the placentæ are expressed *spontaneously,* is as follows:

Average for plac. born edge first, maternal surface out, 5.9 oz.—most.

Average for plac. born edge first, 5.8 oz.

Average for plac. born maternal surface first and out, 5.7 oz.

Average for plac. born edge first, fœtal surface out, 5.5 oz.

Average for plac. born fœtal surface first and out, 5.4 oz.—least.

4. The *average "natural blood-loss" is 5.7 oz.,* when the placenta is expressed *spontaneously* within 20 minutes after birth of the child.

5. The *average "natural blood-loss" for the different methods of placental birth,* as observed *clinically,* is as follows:

Average for plac. born edge first maternal surface out, 7.7 oz.—most.

Average for plac. born maternal surface first and out, 7.4 oz.

Average for plac. born edge first fœtal surface out, 7.3 oz.

Average for plac. born fœtal surface first and out, 7.1 oz.

Average for plac. born edge first, 7.0 oz.—least.

6. The *average "natural blood-loss" is 7.3 oz.,* as observed *clinically.*

7. *"Natural blood-losses"* occur *relatively more frequently* when the placentæ are born *fœtal surface out* than when they are born maternal surface out, but the *quantity of blood lost is greater when the maternal surface is born out* than when the fœtal surface is born out.

8. *"Natural blood-losses" occur more frequently and are larger* when the *Credé method* of expression is used than when the placentæ are born spontaneously.

9. *"Natural blood-losses" are larger in full term labors* than in premature, with all methods of placental birth.

10. The *average "natural blood-loss" is greater for primiparæ* than for multiparæ.

11. *Excessive blood-loss in the third stage* is more apt to occur in *spontaneous* than in Credé cases, but the *quantity of "hæmorrhage" is the same* for both. (Group A.)

12. Birth of the placenta *maternal surface out increases the frequency and quantity* of excessive blood-loss in the third stage. (Group A.)

13. *Large blood-losses occurring with the birth of the secundines are more frequent in spontaneous* than in Credé cases, but the *quantity of blood lost in Credé cases is greater* than in spontaneous cases. (Group B.)

14. Birth of the placenta, *maternal surface out, increases the quantity of blood born with the secundines,* but the *frequency* of this kind of "hæmorrhage" is *increased* by the birth of the *fœtal surface out.* (Group B.)

15. Birth of the *fœtal surface out increases the quantity of* blood lost *in third stage "hæmorrhages" requiring early expression of the placenta,* but that this kind of "hæmorrhage" is *much more frequent when the maternal surface is born out.* (Group C.)

16. The *relative frequency of "hæmorrhages," beginning in the third stage and continuing post-partum,* as well as the *average quantity* of blood lost, is *greater in spontaneous* than in Credé cases. (Group D.)

17. Birth of the *maternal surface out* increases greatly the *frequency* and *quantity of "hæmorrhages,"* which begin in the third stage and continue post-partum. (Group D.)

18. *Post-partum "hæmorrhages" are more frequent in spontaneous* than in Credé cases. (Group E.)

19. *More blood* is lost in post-partum "hæmorrhages," *when the fœtal surface is born out,* but such "hæmorrhages" are *much more apt to occur* when the *maternal surface is born out.* (Group E.)

20. The *frequency of all the "hæmorrhages" in general,* which may occur in the third stage and immediately post-partum, is *increased by the maternal surface being born out,* but the *quantity of blood lost is slightly greater when the fœtal surface is born out,* and is *greatest when the edge is born first.*

21. *"Hæmorrhages" in general* occur *more frequently* and the *average blood-loss is greater in spontaneous* than in Credé cases.

22. *"Hæmorrhages"* are *more frequent* and *larger in full term cases* than in premature.

23. "*Hæmorrhages*" are a *little more frequent in primiparæ*, but *multiparæ lose a little more blood.*

24. The *order of placental births in reference to loss of blood*, when all classes of cases are considered together, is as follows:

1. Edge first, maternal surface out: average loss, 10.8 oz.—most.
2. Maternal surface, first and out: average loss, 10.4 oz.
3. Edge first, fœtal surface out: average loss, 10.0 oz.
4. Edge first: average loss, 9.2 oz.
5. Fœtal surface, first and out: average loss, 8.8 oz.—least.

References and Comments.

30. McLane.—*Obstetric Lectures, College of Phys. and Surg.*, 1896, New York: "Every woman ought to be able to lose 16 oz. of blood at delivery without bad results, as the uterus no longer needs such a large blood-supply as before delivery. If more than 16 oz. are lost, there will probably be some symptoms resulting, but each individual case must be judged by itself as to what constitutes an undue loss of blood, as there can be in such a matter no standard, which is applicable to every case."

31. Winckel.—*Lehrbuch der Geburtshülfe*, 1889, p. 137: "When the central part of the placenta is pushed away from the uterine wall, the blood, which is escaping from the placental site, collects in the membranes, which are gradually loosened by the weight of the placenta, as it bulges downward [i. e., fœtal surface first and out], leaving a channel opening from above into the bag of membranes." Winckel also says on p. 137 that, when the placenta is born edge first, maternal surface out, "the blood cannot collect behind the placenta, but must immediately escape."

32. Duncan.—"*On the Mechanism of the Expulsion of the Placenta*," *Edin. Med. Jour., April*, 1871, p. 902 says: "There is no hæmorrhage worthy of the name," when the placenta is born edge first spontaneously. (See Table 46.)

He also says, p. 902, that, if the placenta is expelled fœtal surface out, "then a loss deserving the name of hæmorrhage is almost as necessary as it is certainly a generally described accompaniment of the process of the expulsion of the placenta." The table 81 proves the exact opposite of Duncan's view, if it proves anything. Also see table above, which proves that the smallest loss occurs when the fœtal surface is born first and out.

33. Playfair.—*Science and Practice of Midwifery, 4th American*

edit., 1885, agrees with Duncan that the placenta is expelled edge first with little or no loss of blood, if spontaneous; pp. 265 and 266.

34. BAUDELOCQUE.—*System of Midwifery, Heath's Trans.*, Vol. II, p. 4: "Sometimes the placenta begins to separate [from the uterine wall] at the centre and the middle of the placenta is then pushed forward, forming a bag behind, which fills with blood, and it presents that side to the touch which is covered with the membranes and vessels, [i. e., the fœtal surface]." When the separation begins at its lower part, the placenta rolls itself up in the form of a cylinder and according to the length of the uterus, so as to present its anfractuous surface to the touch [i. e., edge first, maternal surface out]; and its exit is always preceded by a little fluid blood." The similiarity of these statements, made about 75 years ago, to those of Winckel is striking.

35. SCHRŒDER.—*Lehrbuch der Geburtshülfe*, 1888, p. 225: "When properly used, Credé's method has the double advantage of watching over the uterine contraction and of preventing hæamorrhage."

36. LUSK.—*Science and Art of Midwifery*, 1895, p. 222, says: "As to the alleged dangers of the Credé method, my experience corresponds to that of Rœmer and others, whose comparative statistics show that Credé's method does not increase the quantity of blood lost either in the third stage or during the puerperium."

37. AHLFELD.—*Berichte und Arbeiten aus Giessen*, 1881 und 1882; claims that the Credé method favors hæmorrhage.

38. RŒMER.—*Klinische Beobachtungen über der Nachgeburtszeit, Arch. für Gynæk., Band XXVIII.*, p. 283. Rœmer and the three following observers claim that the Credé method does not favor hæmorrhage.

39. ZINSTAG.—*Beiträge zum Mechanismus der physiologischen Lösung der Placenta, Arch. f. Gyn., B. XLIII.*, s. 255.

40. FEHLING.—*Zur Frage der zweckmässigsten Behandlung der Nachgeburtszeit, Centralbl. für Gyn.*, 1880, Nr. 25.

41. CREDÉ.—*Die Behandlung der Nachgeburt bei regelmässigen Geburten, Arch. für Gyn., Band XXXII.*, s. 96.

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EDITORIAL.

PROPRIETARY POPULAR ADVERTISING AND MEDICAL EDITORS.

Even at the risk of advertising gratuitously still further a proprietary preparation as notorious as that of "Lydia E. Pinkham" or "Old Dr. Grindle," we cannot allow to pass without public protest a very flagrant violation not only of medical ethics but of decency on the part of certain medical editors, if the statements made in an advertising circular received by us be true.

In this circular, bearing the name of the "Ripans Chemical Co.," the following named journals have, it is asserted, accepted the advertisement of "Ripans Tabules," which began and has continued its appearance in the public press and has repeatedly claimed to be a panacea for many ailments, appealing to the ignorant credulity of the laity alone for its support:

The Medical Examiner, New England Medical Monthly, The Medical World, Journal of Comparative Medicine and Veterinary Archives, New York Polyclinic, Journal of the American Medical Association, Medical Times, Der Hausdoktor, Medical Era (Chicago), Medical Visitor, Medical Summary, Medical Times and Register, Medical and Surgical Reporter (Toledo), Leonard's Illustrated Medical Journal, Louisville Medical Monthly, The American Medical Compend, Medical Era (St. Louis), American Journal of Dermatology, The Journal of Nervous and Mental Disease, Medical Mirror, Southern Practitioner, North American Practitioner, North American Medical Review, Trained Nurse, Southwestern Medical Record, The Medical Council, University of Pennsylvania Press, Medical Prog-

ress, The Medical Brief, Pediatrics, The Medical Sentinel, Pacific Record of Medicine and Surgery, The Clinique, Medical Herald, North Carolina Medical Journal, Medical Journal (Charlotte, N. C.).

It is difficult for us to restrain our indignation both at the contemptuous audacity of this proprietary company, which, after outraging professional sentiment so long, made so sure of the fact that it could buy up the medical press, at its convenience, and at the venality, as well, of so many hitherto reputable journals, which have apparently justified the popular impression that medical men, in spite of their loud-voiced rules of ethics, are easily bought. To add to the shame of this transaction we observe in many of the editorial letters of acceptance a price named for the advertisement out of all proportion to the importance or circulation of such periodicals, and one which would never be expected from the proprietors of a reputable preparation. These editors have evidently determined to deserve the Biblical commendation upon the "unjust steward" who was wise "in his generation."

But the shame for all this does not lie alone nor even heaviest upon medical journalism; it is, indeed, referable directly to the profession itself—to its selfishness in its individual interests and to its indifference and ingratitude toward those in its own ranks who are trying to build up its literature and its press. If physicians supported adequately their press *by paying their subscription bills promptly and willingly, as now they do not do*, would any medical journal have found the price offered for the acceptance of "Ripans Tabules" too great a temptation to be resisted? We have long struggled to make an impression upon the armor of selfishness with which the profession has encased itself. We offer it now an object-lesson, in the matter under discussion, from which it may well benefit.

In the pamphlet, to which we have referred, and from which we publish the list of journals which have given up the fight for a professional ethics, toward the supporters of which the profession has shown itself so utterly indifferent, a few labored sentences of sarcasm are directed toward those journals who have not responded to the tempting financial bait held out by this proprietary company. In this list occurs the name of this JOURNAL. We did not answer because we considered the proposition little short of impertinence. We answer now, however, with the subjoined letter, which we have sent to the editor of every journal in the above list which we found on our list of exchanges:

THE AMERICAN GYNÆCOLOGICAL AND OBSTETRICAL JOURNAL.

1 MADISON AVENUE, NEW YORK, MAY 10, 1898.

Editor of The ———.

DEAR SIR: In a pamphlet published by the "Ripans Chemical Co.," and recently sent to us, in which a proprietary preparation named "Ripans Tabules" is extolled, the name of The ———, with which you are connected, appears in a printed list of journals accepting the advertisement of this preparation.

As the latter has for years been hawked through the public press as a panacea for various ills, appealing directly to the ignorance of the laity for its support, we consider it in every sense unworthy of medical recognition and in direct opposition to the interests of the profession. It has chosen to class itself with the "Lydia E. Pinkham and Dr. Green's Nervura" preparations, of public notoriety, and we therefore consider any medical journal which receives or supports this advertisement as unworthy to be classed among ethical medical publications.

For the sake of the good name, therefore, of medical journalism we have removed The ——— from our exchange-list.

Very truly yours,

J. D. EMMET, M.D.,
Editor and Proprietor.

CORRESPONDENCE.

DAYTON, OHIO, May 20, 1898.

To the Editor of the American Gynæcological and Obstetrical Journal.

SIR: As an example of how very similarly two men may work when engaged in the same pursuit I beg leave to quote from a paper I read before the Ohio State Medical Society, May 5, 1898, on Henrotin's method of opening pelvic abscesses. I refer to Dr. Wetherill's form of drainage-tube in your May issue.

"It is the writer's custom, especially where there is much odor, to place a two-way tube made by stitching two rubber tubes together. The smaller, carrying in the solution, reaches to the top of the cavity, the larger drains its lowest parts. Both reach outside the vagina and so permit of frequent irrigations with no disturbance to the patient nor attendant, and sometimes requiring not even a bed-pan."

For retaining other drainage-tubes I have made knots similar to Dr. Wetherill's, mostly where tubes are to be worn indefinitely, but this tube I secure by a stitch.

J. C. REEVES, JR., M.D.

Abdominal Pregnancy with a Peculiar History.

Oil City, Pa., March 20, 1898.

To the Editor of the American Gynæcological and Obstetrical Journal.

Sir: Enclosed find a report of an extra-uterine pregnancy which I hope you will consider worthy of publication.

Mrs. Nancy K., white, American, aged 43; admitted to Oil City Hospital February 23, 1898, with the following history: Menstruation at 11 years; regular; three-days' duration; no pain; married at 15 years; seven children; two miscarriages preceding last child three years ago; no doctor at any confinement. Has worked hard on a farm, and in good health until one year ago, when her health began to fail, and she noticed a lump in the lower left side of her abdomen, which was tender, and increased in size rapidly. In May she was attacked with "inflammation of the bowels," attended by an eclectic physician, and confined to bed for three weeks. For the next three months the lump rapidly grew, until in August, accidentally straining herself at her work, she broke "something," and a "lot of water" was passed by the rectum. After another three weeks in bed she again got up, but was not well; had no appetite, was constipated, became rapidly emaciated, and complained of pain in her abdomen and legs, which swelled. Several times in the next six months the tumor enlarged, and then, following a discharge of rotten looking liquid through the rectum, it diminished again. Her condition became so bad that for another month she was confined to bed, and on the advice of a number of physicians was brought to the hospital.

On admission she appeared 50 years of age; was quite emaciated; presented a tumor extending two-fingers breadth above the umbilicus; irregular in outline; nodular and cystic in feel, lying mostly in the left iliac region. On vaginal examination the uterus was found pushed to the right, two and one-half inches long, and apparently attached to a cystic mass involving the left broad ligament. The breasts were apparently normal, left leg was œdematous and painful, and there was frequent micturition. During the next week her daily temperature varied from 99°–102°, and she was apparently septic.

On March 3rd a coeliotomy was performed by Drs. Thomas and Ward, assisted by Dr. Davis. Upon opening the peritoneal cavity a well was struck containing about two quarts of yellow fetid pus, in

which floated a macerated, male, six-months' fœtus. The placenta was attached to the parietal peritoneum and to the anterior surface of omentum, which seems to have been pushed up and walled off the intestines. The left tube had been ruptured, and the sac was also adherent to it and the left ovary and to the rectum. As much as possible of the placenta was removed from the abdominal wall, the cavity flushed with hot saline, a Miculicz drain of iodoform gauze inserted and left in forty-eight hours. Then daily for ten days, after flushing out with fifty-per-cent. H_2O_2, it was irrigated with formaldehyde 3 i–oi, then dressed every third day, until four weeks after the operation. She left town with a big market-basket on one arm and supporting a drunken husband on the other. During the whole period of illness menstruation continued regularly.

J. M. WARD, A.M., M.D.

OUR BERLIN LETTER.

BERLIN, April 1, 1898.

A furor of scientific discussion has been raised by the recently announced discovery of a new consumption cure by Professor Ernst von Leyden. Not that it is unexpected—in fact, the reverse might be said; ever since the Koch serum fiasco, medical experimenters have been endeavoring to trap the little miscreant microbe called "Tubercle Bacillus," and Professor Leyden's announcement is simply the first of a half dozen we have been expecting.

Dr. Leyden has the temerity to advance his claim on the treatment of only twenty-eight cases. This number he says is all he has had time to treat up to date, and he would not now divulge his discovery, but for the unprecedentedly high percentage of cures he has been able to make. Out of the twenty-eight cases treated he has cured twenty-seven.

Each of his patients has been treated for over six months, and while all of them have not been yet pronounced entirely cured, they are on the high road there, for all pathological progress has been checked, and it only remains for them to build up their general health a bit before they may quit the treatment.

The *modus operandi* of Dr. Leyden's treatment consists in the administration of from 5 to 25 drops of a preparation of creosote, which the professor has termed "creosotal." It is an oily, heavy

liquid, having a peculiar taste and a specific action against the tubercle bacillus.

A patient at first is put upon 5 drops of this fluid, three times a day. This dose is gradually increased until 25 drops, three times a day, are given. This dose is maintained for three weeks when it is gradually diminished until the original quantity is reached.

Although twenty-eight cases are hardly considered by the medical fraternity as a sufficient basis for the claim of success in a new procedure, still the extraordinary high percentage of cures, coupled with the high standing and fair fame of the professor, rendering anything emanating from him frought with the weight of careful thought and honest assertions, has produced a profound impression on the medical societies, and the opinion is freely voiced that an important discovery has no doubt been made.

Your readers have all doubtlessly heard of Dr. Von Leyden, but it may not be amiss to say that he is a professor in the Medical Department of the University of Berlin; a surgeon-general of the German army; the foremost consultant in general medicine in all Europe, and a lung specialist for the last twenty years.

Professor Grawits of the Charlottenburg Hospital has given out the results of some very interesting experiments in the disinfection of rooms by formaldehyd gas. He seems to have proven that this gas has a most wonderful power for destroying pathogenic micro-organisms, at the same time doing no injury whatever to furniture, clothing, or furnishings.

Anthrax spores are practically the only micro-organisms not killed by formaldehyd gas. This is a pity. If it were not so, formaldehyd vapor would be the long-sought golden scavenger of science.

Even when germs were placed within several layers of cloth, inside of cardboard boxes, etc., they were attacked and killed by the gas. Of course the coverings employed were not too thick for the permeation of the vapors.

In the course of the experiments a room was fitted up with lace curtains, velvet carpet, leather chairs, etc., and the germs placed in wearing-apparel of the most delicate texture and tints of color. After hours of exposure to the gas, the life of the germs was extinct, but the rich and delicate furnishings were not in the least affected; the colors not the least bleached; the polish of the leather not disturbed; the texture of the lace and silk unchanged.

Here in Germany the formalin or formaldehyd-disinfection meth-

ods are rapidly replacing all others which were previously in vogue.

The German Government has dealt a final death blow to the sale of "patent medicines" in Germany. It has long been a law that no "secret remedies" should be offered for sale, but a difference of legal opinion as to what constituted a "secret remedy" provided a big loop-hole of law avoidance for the benefit of the "proprietors." Now the Ministry of Commerce and Industry has defined the "secret remedy" and the death-rattle of patient nostrums is heard.

According to the decree, all remedies not sold under a prescription from a doctor must have the formula of its contents printed on the label. This formula (and this is where the new instructions define the law) must be written in the vernacular, not in Latin. It must be intelligible not only to a doctor or pharmacist but to any one who wishes to buy, and it must be sufficient to enable a buyer to decide whether the ingredients contained therein are such as may be reasonably expected to give relief, and whether he is paying a reasonable price for the amounts of the several drugs which are being bought.

All fair minds will at once accord to this decision good common sense and practicability. It is a thorough way of eradicating at one full swoop the immense swindle that patent medicines usually involves.

The German Government is in advance of the world in other medical legislative innovations. The Berlin President of Police has published a rescript of regulations dealing with unlawful competition in the medical profession.

A clause in the rescript says that no possessor of a foreign degree can use the title of "arzt," "praktischer arzt" (medical practitioner) except with a suffix clearly expressing that the title has not been obtained in Germany.

Another paragraph deals with the vast swarm of quacks, charletans, bone-setters, etc., etc., and rules that persons who, without having passed medical examinations and obtained a degree, publicly offer to carry out medical treatment and give advice, are forbidden henceforth to use titles, such as arzt, surgeon, oculist, obstetrician, dentist, veterinary surgeon, or even such as homœopathist, hydropathist, specialist, magnetopathist, natur-arzt, etc., etc. The title of qualified medical assistant, and masseur, or masseure, may be used only by such persons as have been qualified by the State medical officers in Berlin or Charlottenburg.

At a meeting of the university faculty recently the proposed ad-

ditions to the medical curriculum were discussed. It is thought that more attention to hydrotherapy, Swedish gymnastics and massage, dietetics, balneology, and climatology will not hurt the student any, especially foreign students (and by this is meant Americans), as these branches of therapeutics are generally neglected in medical colleges.

Concerning this the *Berliner Medizinische Wochenschrift* says: "The average doctor when let loose on mankind has little more than a shadowing notion of such things as "packs," "Scotch douches," halt baths, or the method of massage, or Swedish gymnastics. His ideas of invalids feeding are bounded, as a rule, by the three names, "fluid," "low," and "full" diet. He is ignorant of all but the elements of sick nursing, its modern aims and achievements. Not only do the patients suffer from his imperfect familiarity with practical methods but the profession suffers too, since clever quacks cultivate these neglected branches of therapeutics and become dangerous competitors of the legitimate practitioners."

In the course of a debate in the Budget, in last week's sitting of the Reichstag, the admission of women to the German universities was ventilated. Prince Schönaich-Carolath quoted figures to show how far England, the United States, Russia, and smaller States are ahead of Germany as regards the admission of women to the medical curriculum, and asked for more liberality in Germany. Count Posodowsky (the head of the Reichsamt des Innern) replied with the usual stock arguments against the mental capacity of women, and after one or two weak speeches the matter dropped.

In a paper read before the Hufelaus Society of Berlin, Dr. Neumann uttered a warning against bathing infants during the first few days after their birth, as he is of the opinion that cicatrization of the umbilicus is hindered by bathing, and that infection may arise from the germs in the water.

The impending war between the United States and Spain is causing a lot of interest here, especially among the American students. Several loyal sons of America have stated their intention of abandoning their studies here to return to the United States for the purpose of joining the army or navy. Your correspondent is among this number, and it is, therefore, probable that this will be the last letter I will be able to send you. We have sent our applications to the Surgeon-General at Washington, and expect to hear from there any day now, calling us home to serve our country.

VICTOR NEESEN.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, March 8, 1898.

The President, W. GILL WYLIE, M.D., in the Chair.

(*Continued.*)

*Birth of the Secundines: A Clinical Study of the Relative Frequency of Methods of Birth of the Secundines and of the Relations of These Methods of Birth to Hæmorrhage; based on Observations of 2,700 Cases.**

BY E. A. TUCKER, M.D.

(See page 569.)

DISCUSSION.

Dr. J. CLIFTON EDGAR: The paper is so entirely statistical that it is difficult to discuss it. I desire to compliment Dr. Tucker and thank him for this absolutely unprejudiced study of the birth of the secundines. It is rather amusing to note the teaching of the different authorities and to see how influenced it is by certain theories. Most of the maternities in Germany still cling to the teaching of Schultz that the placenta is born with the fœtal surface presenting. And it took years and years in England, until Hart made his sections for them to get away from Duncan's theory that the placenta emerged from the os uteri with its edge presenting. The main point in the paper which interested me is the one which the author has so beautifully brought out, *i. e.*, the frequency of hæmorrhage in spontaneous delivery of the secundines and its rare occurrence after the Credé method has been employed. During the spring of 1888 I had the opportunity of watching a thorough trial of spontaneous delivery of the placenta in Wickel's clinic. An order was posted up in the wards that there should be absolutely no interference unless the woman's life was in danger. I distinctly remember one case in which delivery took place in the afternoon and the spontaneous delivery of the membranes did not occur until eleven o'clock the next morning, thus making the third stage of

labor last fifteen hours. The conclusions which I arrived at were that hæmorrhage is apt to be greater after spontaneous delivery and that interference is necessary during the third stage. Since that time, I believe, the pendulum has swung in the other direction.

I well remember Dr. Lusk in the Emergency Hospital teaching us that the Credé method immediately applied would save the patient much suffering and much loss of blood. I cannot quote any figures but it does seem that there is a middle course between waiting for hours for spontaneous delivery and the immediate Credé expression after the completion of the second stage. It is perhaps not fair to draw any therapeutic deductions without statistics to back them up but to me it seems that the best results, as regards the prevention of hæmorrhage, etc., will result by following a middle course.

Dr. R. L. DICKINSON: Obstetricians cannot be too thankful for a study which has necessitated so much labor as that presented to us to-night by Dr. Tucker. In hospital practice a good, general rule is to make friction over the uterus for half an hour, Credé half an hour and then, if the placenta does not come away, to go in after it. There are two classes of unwise obstetricians—sometimes met in consultation work—the man who enters the uterus and removes the placenta at once and the man who waits, neglecting to watch the uterus. Other bad cases encountered are those in which the patient has been many hours in labor, during which time chloroform has been administered for hours and forceps applied repeatedly. In such cases the woman is much exhausted and it seems to me wise that every possible ounce of blood should be saved; therefore the placenta should be removed promptly. When this is done a little expedient which will prevent sepsis should be employed—the hand which enters the uterus to grasp the placenta should be enveloped in the membranes in order that it may not come in contact with the uterine wall. I have done this in a number of instances. Dr. Tucker's paper has given us the rational basis for the general employment of the Credé method of delivering the secundines, previously employed in an empircal way.

Dr. MALCOLM MCLEAN: I would like to ask the author if in his studies he made any note of the influence the administration of an anæsthetic, especially of chloroform, has upon the amount of hæmorrhage. This certainly would be an element of importance. I am grateful to the author for having gone into the study of the subject.

Dr. DICKINSON: I do not understand how the blood loss was determined nor how the blood was differentiated from the amniotic fluid.

Dr. J. M. MABBOTT (by invitation): I would like to ask the author

whether, in the part of the paper he did not read, he alludes to the location of the placenta, particularly to placenta prævia and its relation to the blood loss.

Dr. A. E. GALLANT (by invitation): I saw perhaps ten per cent. of the cases included in the paper and therefore I can bear out what the author has said. It is only those who have worked with him who can realize the amount of labor involved and the care with which these observations were made. At the Sloane Maternity Hospital it is the rule to employ the Credé method, if the placenta has not been born within fifteen minutes after delivery of the child, and I have no doubt that this is the reason why so little blood was lost. The liquor amnii was allowed to drain away before the blood was caught for measurement. We even went so far as to squeeze the blood out of the sheet but we finally got so expert at estimating the quantity that we could do this within a fourth of an ounce. The work involved much time and labor but Dr. Tucker was determined to get some satisfactory data in regard to the way in which the placenta is born. The text-books do not agree in this matter; their statistics differ or else they are copied from some other work. The entire profession should be grateful to Dr. Tucker for the arduous task which he has performed. Winckel trusted a great deal of his work to his first assistant but Dr. Tucker saw every case which he reports and this personal observation adds very much to the value of the statistics.

Dr. W. S. STONE (by invitation): I can add my testimony in regard to the details carried out by Dr. Tucker and to the unprejudiced way in which the observations were made. The fact that many of them were unconsciously made by members of the house-staff does not alter their value. We did not know that the paper was to be written.

Dr. G. L. BRODHEAD (by invitation): The paper is very thorough and there is little one can add. The statistics compiled by the author show the necessity for the employment of the Credé method. At the Sloane Maternity it is the rule to employ the Credé method if the secundines have not come away fifteen or twenty minutes after the birth of the child and the results show its value. As I remember there was an average loss of only seven and a half ounces of blood when this method was employed. From my experience I think that with a trained assistant this loss can be made much less. We all know of cases in which the uterus was supposed to be held down firmly by an assistant when in reality it was up to the navel or above. There is no question but that the fœtal surface first and out is the best way in which the placenta can be born. In this way blood to the amount of three or

four ounces is caught in the membranes without soiling the patient or the bed. Where oozing occurs in spite of rubbing up the uterus, an endeavor should be made to express the placenta which we know from experience will be born maternal surface out, although there is no question but that when the maternal surface comes first the membranes are more apt to be retained. The paper should stimulate us to carry out our rules carefully.

Dr. E. A. TUCKER, in closing: My investigations in this particular line date back to the time when I began to study obstetrics and I was led to make them because the teaching of different men varied so much.

I was glad to hear Dr. Edgar mention Winckel's clinic. When I was there in 1890 I noticed that many of the so-called "spontaneous" deliveries of the secundines were not really spontaneous but were hastened by the midwives who often quietly passed their hands under the sheet and gave the uterus a vigorous squeeze. The rounds they made about the labor-ward were speedily followed by "spontaneous" expulsion of the placenta. Winckel's figures show something like two hours as the length of time elapsing between the birth of the child and that of the secundines and the hæmorrhage figures are very much larger than in the cases in which the Credé method is employed.

I have not employed the immediate Credé method. It seems to me that it is better to wait fifteen or twenty minutes.

In regard to collecting the blood we wait until the amniotic fluid has run out and then catch the blood as it escapes. There is little danger of any error being made.

In regard to the different class of physicians we see in hospital and private practice, this must have impressed us all. Some men employ the Credé method too soon, while others go to the other extreme. As an illustration of the latter, I was once called to see a patient in a case in which the placenta had not yet come away and found the physician sitting by the bedside administering chloroform, which he had already kept up for two hours, waiting for the placenta to be born.

The point raised by Dr. McLean is a very pertinent one. There is no doubt but that chloroform has an influence on the bleeding. I have figures in regard to this and hope some day to make it the subject of another paper.

The point mentioned by Dr. Mabbott in regard to hæmorrhage as influenced by the location of the placenta is referred to in another paper in connection with tearing of the membranes and the method of birth. When the placenta is situated at the fundus, it is natural to think that the fœtal surface of the placenta will be born first and out,

like an inverted umbrella. In cases where the placenta has its attachment low down, the placenta would probably be born edge first.

In regard to retained membranes, I have figures on this point also, which I intend to give at some future time. Placentæ born with maternal surface out give the most trouble in delivery and are the most frequent causes of retained membranes and hæmorrhage.

Dr. GALLANT: I would like to ask Dr. Tucker if he has included in his paper the chart used at the Sloane Maternity Hospital, in order to give an idea of the thoroughness with which observations are made. Barton Cooke Hirst recently wrote me that he had collected charts from every large maternity hospital in different parts of the world and that he considered the Sloane Maternity Hospital chart the best he has ever seen.

Stated Meeting, Held April 12, 1898

The *President*, W. GILL WYLIE, M.D., in the Chair.

Amenorrhœa.

Dr. H. J. BOLDT: I have a rather interesting patient to show,—a woman 26 years old who has never menstruated. The genital organs are apparently normal, although the uterus is small.

THE PRESIDENT appointed Drs. Jewett and Krug to examine the patient and report.

DISCUSSION.

Dr. CHARLES JEWETT: We have examined the patient and found nothing especially abnormal. The uterus is small—not more than two and a quarter inches long—and the vagina is short.

Dr. E. L. H. MCGINNIS: In October last I read before this Society a paper on amenorrhœa, and reported several cases of infantile uterus treated by galvanism in which menstruation had been brought on. One of the patients was a married woman, 29 years of age. She soon became pregnant but miscarried at the third month. She again conceived and was recently delivered of an eight-and-a-half-pound child, yet this patient had an infantile uterus when she first came under observation. I have two other cases in which this condition was present, and in which I have been able to bring on a half-day flow by application of the galvanic current. I am most anxious to know what treatment Dr. Boldt has employed in his case.

Dr. BOLDT: Nothing as yet has been done for the patient, for I saw her for the first time yesterday.

Dr. W. E. PORTER: In connection with this case I would like to mention one which I recently reported to the Bellevue Alumni Society. The woman was 32 years of age and had never menstruated. The uterus was only an inch and a half in length and the cervix very small. Upon closely questioning her I learned that when she was about twenty she coughed up blood at intervals although not to any great extent. This was the only history of vicarious menstruation which I could obtain. She was very thin and poorly developed, and had been married some years. After watching her for some weeks, I noticed one day that she had ecchymotic spots on different parts of her body. She then told me that these spots appeared at regular intervals, lasted several days, and gradually faded away. Further observation showed this to be a fact. The case seems an unusual one, for I never heard of a similar one being reported.

Report on Two Cases of Palliative Surgery for Pelvic Lesions.

Dr. HIRAM N. VINEBERG: Nowadays so much is written and said about conservative, or rather palliative surgery in pelvic affections, that we are in danger of going to extremes in that direction. It seems to me wise, therefore, to report our failures with that plan of treatment and draw lessons from them which may be of value to us in the future.

Case I.—M. W., aged 38 years; married twenty-two; two children; last child 16 years of age. No miscarriages. Menses regular and normal. Had some "womb trouble" fifteen years ago for which she was treated with relief. Has remained well and was free from pelvic symptoms until her present illness which set in on July 18, 1897. On this date she was seized with pain over the lower part of the abdomen which continued with variable severity until I saw her on the night of July 21st, the fourth day of her illness. On the afternoon of this day vomiting set in for the first time. No record had been kept until now, and the attending physician stated that there had been some fever from the beginning. I found a very ill woman. Temperature 102° F. (oral); pulse 120, soft and irregular; cheeks sunken; eyes glassy. Abdomen moderately distended and universally tender, but the tenderness was most marked in the left iliac region. On bimanual examination a fluctuating mass, the size of a closed fist, was found behind the uterus and bulging against the

posterior vaginal vault. I advised a vaginal incision to give exit to what I looked upon as a pelvic abscess, with threatening general peritonitis, saying that it might be necessary to do a more radical operation later when the patient would be in a better condition. I carried out the vaginal section that same night, giving exit to about a pint of seropurulent fluid. I dilated the incision so that I was enabled to introduce my four fingers, but could feel nothing except the walls of the cavity, though on making pressure with my other hand over the left iliac region a resistance was manifest. The cavity was packed with iodoform gauze.

July 22d, 12 M., p. op., temperature 100.2° F.; pulse 108. At 5 P.M., temperature 102.6° F.; pulse 120. Removed the packing and irrigated the cavity, but fluid came away clear.

July 23d, 8 A.M., temperature 102.4° F.; pulse 124. Given a turpentine enema, which had the effect ot bringing away some feces and a large quantity of gas. At 6 P.M., temperature 101.3° F.; pulse 118. Has passed gas several times during the day.

I was not satisfied with the patient's progress and with the view of doing a radical operation a consultation was had with an eminent Fellow of this Society. The consultant was opposed to my proposition, assuming that the patient was doing very well—that if there were a pus collection higher up it would find its way to the free opening in the posterior vault, and he advised moving the bowels from above with calomel and salines. I could not bring myself to carrying out the purgative treatment at present. The patient kept, however, apparently improving, so that on the morning of July 25th I deemed it safe to leave her in charge of her physician for the day, and took a trip to the country. The temperature was 99.8° F.; pulse 98. The abdomen was fairly flaccid and not markedly harder. The only complaint she made was of a bad taste in her mouth and of a pain at the epigastrium. The tongue was rather dry and furred. I deemed that now would be a good time to administer the calomel and saline. She was accordingly given calomel, $\frac{1}{10}$-gr. every fifteen minutes until ten doses were taken, and then part of a bottle of citrate of magnesia in divided doses. She had the last doses of magnesia at 4 P.M. An hour before her temperature was 100.4° F. At 4.30 P.M. she had a slight movement of the bowels attended with severe abdominal pain. Her temperature now was 102,6° F.; pulse 116. I was telephoned for on reaching the city at 9 P.M.; found the the temperature 101.2° F.; pulse 116, weak and compressible. I urged an immediate radical operation, to which her relatives would

not give their consent until a consultation could be had with the President of this Society. As he was not in the city it was 4 P.M. on the next day before he saw the patient. In the meantime she had been losing ground. Her temperature was only 101° F., but the pulse, though only 126, was small and very weak. Dr. Wylie performed vaginal hysterectomy at 5 P.M., I and my assistants rendering him the necessary assistance. The operation was done rapidly and with but very little loss of blood, but the patient died about five hours later in spite of free stimulation and copious subcutaneous infusions of saline solution. The operation disclosed on the left side, pretty high up, a small ovarian abscess, with a small perforation allowing some of the pus to escape into the general peritoneal cavity. The perforation no doubt took place on an adhesion with the bowel being broken up through peristalsis as a result of the calomel and magnesia. I think I am safe in saying that had I been allowed to perform a radical operation three days before, the result would have been different. I may go even further, and say had the operation been done when I returned to the city on the night of July 24th, the patient's life might have been saved. As it was the lapse of nineteen hours allowed the peritonitis to become general, and the patient to become pretty thoroughly septicized. The case forcibly illustrates the necessity of more active surgical intervention in similar cases where we find that our palliative surgery is not followed by complete subsidence of all the symptoms in the course of twenty-four or forty-eight hours. Of course, it is difficult to lay down hard and fast rules for these cases, but one can usually tell whether a given case is progressing satisfactorily or not after an incision and drainage of a pelvic pus collection.

Case II.—Mrs. B. W., aged 32 years; married six years; had a child three and one-half years ago; was seen by me on February 24th of this year. She was a very frail, delicate woman, weighing less than ninety pounds, and had been ailing more or less for some years. Her physician informed me that last summer he had treated her for an attack of malaria. Her menses had always been irregular, recurring at intervals of four, five, and six weeks, moderate in amount, and unattended with pain. About a month before the menses had remained away for six weeks. She then began to flow slightly and had some pain in the left iliac region. The flow continued for several days, her physician suspected an abortion, and performed a curettage without anæsthesia. The flow still continued, the pain grew rather worse, and the patient began now to suffer

from nausea and vomiting. Ten days later the doctor curetted her again, the flow ceased now, but the patient's condition remained about the same. She had considerable pain, some fever, and incessant vomiting.

I found the patient with a temperature of 102° F. (oral); a pulse of 130, very feeble and irregular; a dry, glazed tongue; abdomen slightly distended, very rigid, and exceedingly sensitive in both iliac regions. On bimanual examination an irregular mass the size of a cocoanut was found behind the uterus and extending upward to the left side. It was moderately fluctuating and very sensitive. I made the diagnosis of a probable ectopic gestation, with moderate peritonitis. As the patient's condition would not warrant any major operation I advised vaginal incision and drainage for the time being. That same night, under superficial anæsthesia, I made an incision in the posterior vaginal vault and gave exit to about a teacupful of dark, tarry blood, and old coagula. With my fingers in the incision I could feel an irregular mass hanging free in the cavity and attached to the uterus. This I took to be the ruptured tube, but it was not possible to clamp and remove it without enlarging the incision considerably, which I did not dare do without running the risk of having a death on the table. The cavity was irrigated with a saline solution and packed lightly with iodoform gauze. For the next three days the temperature ranged from 99° to 101° F. Pulse from 116 to 130. The abdomen became flaccid, the patient passed flatus freely, and had several stools. Still, I was not satisfied with her progress, the vomiting persisted with variable severity, and the patient made the impression of being a very sick woman. On the fourth day after the vaginal incision the pulse had improved very much in quality and I felt that now the opportune moment had arrived either to do a vaginal hysterectomy or to open the abdomen and be guided in my further course by what would be found. The husband would not give his consent to any further operative interference without more counsel. It was night before a consultation was arranged, by which time the pulse had again grown very rapid and feeble. The consultant rightly held that the patient was in no fit condition to withstand a major operation. He considered that her chances of recovery were equally as good without operation as with it. With this opinion I did not, however, fully coincide. I stated that, in my opinion, the removal of the uterus and free drainage might possibly save her; that I was certain there was trouble higher up, which, if left alone, would surely kill the patient, but I could not deny the

risk of having the patient die on the table if the operation were carried out. The patient died three days later, the symptoms remaining about the same, excepting that twelve hours prior to death the pulse and temperature went up considerably. Flatus and stools were passed to almost the very last, and the abdomen did not become very much distended. On opening the abdomen after death the omentum was found in a condition of gangrene, the intestines were bathed in purulent fluid, and the peritoneum was of a dirty, grayish color. There was no communication between the general peritoneal cavity and the cavity opened through the vagina. The left tube was torn and ragged, the ovary of normal size, but of a dark color. The right viscera were not enlarged, but very much discolored. The patient, therefore, had in addition to her pelvic hematocele a low grade af general peritonitis. The origin of this is uncertain, but it is more than likely that the two curettages, under imperfect aseptic precautions, stood in a causal relation to it. In reviewing the case now in the light of the course it ran and the findings *post-mortem*, I am inclined to the belief that had I been permitted to open the abdomen and re-establish drainage above and below, recovery might have taken place.

I thought it might be of interest to bring these experiences, recurring within six months, to the notice of the Society, with the hope of eliciting profitable discussion and to learn if other Fellows have had similar experiences.

Discussion.

The President: I should say that the cases reported were desperate ones. The condition of the patients was so bad that the only hope lay in getting rid of the uterus. I think the great objection to opening from below in these cases is that we do not get out all the septic material. I always try to confine my conservative work to that class of cases in which the abscess is large and localized, and I find that I get good results. In a case which I saw some time ago, the patient had a temperature of 105.5° F. and was supposed to be dying. I did not attempt to move her from the bed but at once inserted a trocar in the cul-de-sac and drained off a quantity of pus; also left a part of trocar in for drainage. The temperature immediately fell. Three or four days later the opening was enlarged. The patient recovered, and has since borne children. In properly selected cases conservative treatment gives good results. My rule

is to do the radical operation in peritonitis before the dangerous stage has set in. At Bellevüe we have an excellent opportunity of carrying out this method of treatment, and we save many cases which would have been lost had we not operated at once to check the peritonitis. It is sometimes a very difficult matter to decide whether to operate from above or below. The latter method is attended by less shock, but it is not so thorough as the former operation.

Dr. VINEBERG: The point I wish to make is that in both cases the vaginal incision served the purpose for which it was intended—that of a palliative measure to tide over the patients until they were in a fit condition to withstand a more serious procedure. In the first case I feel sure that the patient would have been saved had I been permitted to do the radical operation when I thought it necessary. The consultants insisted upon delay until it was too late.

Ectopic Gestation.

Dr. BOLDT: This specimen is shown, not because it is in any way novel but because of the peculiar history. The woman from whom it was removed came to my office for the first time a week ago yesterday. She had been curetted for endometritis on two occasions, two and a half and one year ago respectively. Since the last curettement she had menstruated regularly and been perfectly well until two weeks before she consulted me. During those two weeks she had been losing a little blood at irregular intervals. She was entirely free from pain and had not missed a period. Examination showed a freely movable uterus; the left tube and ovary were readily palpated; on the right side there was some scar tissue and a little sensitiveness, in consequence of which no attempt was made to palpate the adnexa of this side. There was absolutely no complaint save the slight, irregular bleeding. I decided to employ galvanism, and gave her fifty milliamperes for ten minutes. Four days later the patient again came to see me and fainted while waiting for her turn to consult me. I was immediately summoned and found her anæmic, with a small, rapid pulse, retching, nausea, and vomiting. In half an hour she was pulseless. A diagnosis of ruptured ectopic pregnancy was made, and I had her removed to the hospital at once. When she reached there she was in profound collapse. With the kind assistance of Drs. Tucker and Erdmann, who happened to be in the hospital and who rendered great service in transfusing the

patient and in administering oxygen to overcome the labored breathing, the abdomen was opened, and the still bleeding tube containing the fœtus was removed. The latter is between three and four weeks growth. There was an enormous quantity of blood in the pelvis. At the end of the first twenty-four hours the temperature was 103° F., but this was due to absorption as it was impossible to remove all the blood from the abdomen on account of the desperate condition of the patient. The patient is now doing very nicely.

The case is interesting for the reason that it has been claimed that in the early stages of ectopic gestation the galvanic current will destroy the life of the embryo and prevent rupture. It is the third case of ectopic gestation I have seen in which there has been absolutely no pain and no other symptom, except a slight bleeding, until the time of rupture.

DISCUSSION.

Dr. H. C. COE: The case is of interest on account of there being such a profuse hæmorrhage at so early a stage of gestation. I am convinced that these cases stand a much better chance of recovery after operation in a hospital, because of the skilled assistance (especially where rapid work and prompt stimulation are called for), and the more favorable environment. In two instances recently in which the patients were in collapse, I have taken the responsibility of removing them to the hospital, and both patients made a good recovery. One woman was nursing a four-weeks-old baby, and the other had been confined only six months before. Neither of the patients had any symptoms until rupture occurred. I have seen patients recover after operation in profound collapse, and in one case, similar to the one reported, recovery occurred without surgical interference, which was deemed unjustifiable under the circumstances. The reporter certainly deserves great credit for the promptness with which he acted, and is to be heartily congratulated on the outcome of the case.

Hysterectomy for Malignant Disease.

Dr. BOLDT: This specimen is a uterus, which was removed on Sunday last for cancer of the corpus, which extends into the cornua and tube to the left. The patient is 60 years of age.

Adherent Ovarian Cyst.

Dr. BOLDT: This ovarian cyst was removed this morning. It was very extensively adherent and its enucleation resulted in an

enormous amount of raw surface being left. For this reason, and owing to several injuries of the intestines, the uterus was also removed, to allow an opening from below of such nature that there would be drainage in the event of intestinal fistula.

Fibromyoma of the Urethrovaginal Septum.

Dr. H. C. Coe presented a specimen with the following history: The patient, aged 30, had been married nine months, and there was no complaint of dyspareunia; indeed, there were no symptoms referable to the pelvic organs, especially any vesical irritation. On examination, a smooth, elastic tumor, the size of half an orange, was seen projecting into the vagina and apparently embedded in the urethrovaginal septum. On passing a sound the urethra was found to be free. The relations of the neoplasm to the base of the bladder could not be determined. An incision was made over the tumor, which was easily enucleated, a few small vessels being tied. It was found to be bilobed, one mass extending upward beneath the base of the bladder. Oozing was checked by ten sutures of catgut and gauze packing. The patient was discharged before the end of the second week, and when seen a fortnight later a small cicatrix marked the site of the growth. Microscopically it proved to be a fibromyoma. The reporter called attention to the rare occurrence of such neoplasms in this locality, and also to the fact that it gave rise to absolutely no symptoms. It might easily be inferred that it would have formed a serious complication if not discovered until the second stage of labor.

Transverse Uterine Incision in Cæsarean Section.

Dr. Chas. Jewett: The patient was a woman 23 years of age, of Parisian birth, and a primapara. Labor pains began at term on the 5th inst., and continued till the time of operation. She was referred to the Bushwick Hospital on the 7th by Drs. P. Scott and W. B. Chase, with a diagnosis of absolute contraction of the pelvis. On admission her urine contained ten per cent. of albumin and she was somewhat anæmic. She was of small stature, a little less than five feet in height, but otherwise presented no external evidence of deformity. The pelvic measurements externally were: External conjugate 17.5 cm.; interspinal diameter 23 cm.; intercostal diameter 28 cm. On vaginal examination the os externum was found about half dilated. The sacrum was strongly convex from side to side. The diagonal

conjugate measured 8.2 cm. The promontory was high and the true conjugate was estimated at 6.3 cm. The fœtal head was large, the only obtainable diameter being about 12.7 cm. Cæsarean section was performed, the uterine incision being made transversely at the base of the fundus from one round ligament to the other. An arm of the child was accidently caught and the shoulder brought up, but the extraction was easily effected on seizing the feet. As the uterus retracted the incision presented a depth of about 4 cm., and was easily sutured securely.

The child, a male, weighed 4593 grammes (10 lbs. 2 ounces). The head measurements were: O. F. 12.5 cm., O. M. 14 cm., S. O. B. 10.8 cm., Bi P, 10 cm., O. F. circumference 36 cm. The child is living and the mother is recovering as after a natural delivery,

I am not aware of any reported case in which other than the usual longitudinal incision of the uterus has been adopted in this country. For the transverse incision at the fundus, Fritsch claims the following advantages, among others: (1) The abdominal incision being higher there is less danger of hernia; (2) the blood loss is slight; (3) the uterine wound is easily closed.

Müller has in several cases opened the uterus at the fundus, not transversely but longitudinally. Incision at the fundus I believe better than the usual incision for the reasons above cited. It avoids the danger of invading the lower non-contractile segment. This accident has happened to me in two cases. No ill-result followed, but the wound cannot be so securely closed. I can see no advantage in the transverse over the longitudinal incision, however, provided the wound is limited to the fundus.

The bleeding from the incision was moderate. This, however, I prefer to always control by the cervical constrictor held lightly by an assistant. The incision did not involve the placental site, which was on the posterior wall.

The closure of the uterine wound was more satisfactory than I have found it in the ordinary method of incision. Yet this was due to the greater and more uniform depth, and the advantage would have been as great had the incision been longitudinal so long as it was confined to the upper portion of the uterus. Care should perhaps be taken after high incision that the omentum is not pulled down too far. The omentum is pretty sure to become adherent at the suture line and injurious traction might result from a high attachment, as the fundus sinks into the pelvis.

DISCUSSION.

Dr. BOLDT: I think the advantages claimed for the transverse incision by its originator may be supplemented by the one suggested by Dr. Jewett, that is, the fact that the suturing can be done much more securely by this method. It can also be done more expeditiously, and the more quickly a Cæsarean section is done the better the results will be.

Dr. VINEBERG: I would like to ask Dr. Jewett whether he turned the uterus out of the abdomen before he incised it.

Dr. JEWETT: No. I have never lifted the uterus out before incising it. As the uterus contracts on extraction of the child, the cervical ligature, held by the assistant, draws the uterus up through the abdominal wound.

Uterine Drainage; Drainage-tube versus Gauze.

(See page 750.)

BY W. E. PORTER, M.D.

DISCUSSION.

Dr. R. A. MURRAY: I am fully in sympathy with the author so far as the necessity for drainage is concerned. As he has quoted me, I will say that I still employ drainage in septic and non-septic conditions of the uterine mucous membrane without intra-uterine packing. I would not, however, take exception to drainage obtained by means of accurately placed gauze. When I curette I dilate the os until I can introduce my forefinger, and after the curetting a hot intra-uterine douche is given through a double-current cannula. No packing is used. I confess that when I have used gauze I have not had such good results as when I have employed no pack. In 1893 I reported three cases of gonorrhœal pyosalpinx and three cases of puerperal peritonitis treated by uterine drainage. All of the patients recovered and all of them have since borne children. I still feel that good drainage may be obtained without gauze and without a tube, unless there is a flexion present which has to be corrected—which is an entirely different matter. If there is no flexion and no displacement which calls for something to hold up the uterus, I see no necessity for the use of the tube. Packing the uterus to control hæmor-

rhage is also another matter. Here the tampon is used for the purpose of making pressure. The author has referred to the presence of débris on the gauze when it is removed from the uterine cavity. I have seen this more than once, and for this reason I think it is better to do without the gauze. I have seen cases in the practice of others in which packing of the uterus has been followed by septic endometritis and peritonitis, and tubal trouble has been known to ensue in patients who have been fortunate enough to survive the acute attack. My custom now is to thoroughly dilate the cervix and wash out the uterus with a very weak solution of bichloride of mercury—1–8000. No gauze is introduced but the irrigation is repeated in one, two, or three days, according to the severity of the case. No be is necessary to maintain the patency of the cervical canal.

Dr. H. C. Coe: I long since expressed the opinion that the expression "gauze drainage" was not strictly correct from a scientific standpoint, and still hold that view, for reasons expressed by the reader of the paper. When I introduce gauze into the peritoneal cavity it is for the purpose of controlling oozing, covering raw surfaces, or walling off purulent foci—not with the expectation of removing any considerable amount of septic material by capillary drainage.

Moreover, in gauze tamponade of the uterus the merely draining of the cavity is seldom the main purpose aimed at; the maintenance of a patent cervical canal, stimulation of a flabby organ, and the arrest of hæmorrhage are also effected.

It was stoutly affirmed that the Fallopian tubes could be drained by curetting and packing the uterine cavity. I always believed that this was more or less theoretical, and subsequent experience has convinced me that there is no sound anatomical basis for this theory. After divulsion for anteflexion and stenosis gauze certainly does not permanently overcome the obstruction, and the uterine drainage-tube would seem to be more useful. I have tried one of Dr. Porter's instruments and was satisfied that it accomplished the object aimed at.

Dr. R. H. Wylie: I can commend almost all which Dr. Porter has said, as it is essentially what the President of the Society has been teaching for many years.

His suggestion in regard to the cervical drainage-tube is plausible. In regard to a hollow arm in the President's drainage-tube, which Dr. Porter has devised, it seems to me to complicate the instrument and render it especially difficult to clean.

In cases in which the uterus is small I do not believe in irrigation, as it can be cleaned out sufficiently with the curette.

In cases of undeveloped uteri associated with dysmenorrhœa, the drainage-tube, besides draining, serves to enlarge and straighten the canal, also.

In cases of subinvolution and retrodisplacement a retroversion pessary should be used in conjunction with the drainage-tube. After abortion and labor there is often no need of artificial drainage if the uterus has been thoroughly cleaned out, as the cervix is usually so patulous when drainage and irrigation is needed for septic endometritis, I prefer the use of *two* large rubber drainage-tubes, with thick walls, that will preserve the lumen and yet do no mechanical injury. I have never used gauze to drain the uterus. I think the author has well described how it acts as a plug or dam rather than a drain. I dislike gauze either as a drain or as a means of stopping hæmorrhage, as it does neither well.

Dr. JEWETT: In septic conditions of the puerperal uterus the use of the cervical tube might seem rational as a means of freer escape for septic fluids and possibly of favoring their expulsion by provoking uterine contractions. Drainage alone, however, cannot be trusted. The fluids are too viscid to drain effectually. Something more is needed. It is true the curette reopens the lymphatics. But absorption must be combatted by irrigation. It is true, too, that in septic infection the germs have usually gone beyond the reach of douche or curette before treatment is begun. The uterus, nevertheless, must be cleansed and kept clean. I have come to attach a good deal of value to prolonged and repeated douching. A good irrigant is Tarnier's iodine-water, strong enough to slightly stain the skin. It is repeated as long as the temperature falls after it, and as often as the temperature begins to rise again. A smooth glass tube is least likely to do harm. There should be but one or two openings, and those close to the end. The patient is placed on a table with a Kelly pad under the hips and the douching conducted as an operation—aseptically.

Gauze I have ceased to use for drainage. In septic cases a gauze pack may help to bring away necrotic shreds which become entangled in the meshes, but the gauze must be removed in eighteen or twenty-four hours.

The author of the paper lays stress on the antiseptic cleansing of the vagina. Recent observations would serve to show that the use of chemical antiseptics in the vagina before operation is not only

unnecessary but harmful; at least, in conditions of health. The chemical arrests the action of the natural protective processes for many hours.

In obstetric operations, therefore, even in the induction of abortion or premature labor, I have omitted all vaginal cleansing in the absence of diseased secretion.

Dr. VINEBERG: Early in my work I used gauze very extensively, but soon gave it up because I consider that it does harm. In septic cases I find that the patient speedily develops a chill if the uterus is packed. I am also in accord with Dr. Coe in regard to gauze drainage of the abdominal cavity. The uterine tube recommended by Dr. Porter appealed to me until he said that it could be left in the cervix for three or four weeks. It seems to me that this might cause traumatism. I would not like to leave a tube in so long. Nine patients would do well, perhaps, but the tenth might have trouble.

Dr. H. L. COLLYER: I have been much interested in the paper and think the author's tubes possess advantages over any heretofore made. The tube recommended by the President answers the purpose of affording drainage, but it does not offer any opportunity for washing out the uterus. The fenestrated tube permits of washing out only those portions of the uterus which are near the opening of the tube, for the uterine walls will contract upon it and prevent the circulation of the irrigating fluid around the tube. In some cases, upon removing the tube advocated by Dr. Wylie, I have found that the uterine tissues have entered these openings. I can understand how Dr. Porter's tube will act to overcome flexion and hold the canal open, thus affording a certain amount of drainage. I think, however, that all tubes are liable to set up serious trouble. Last winter I operated upon a case of pyosalpinx said to be due to one of these "infernal" tubes. With regard to gauze, I have used it for a number of years. Everybody has different ideas as to its action. There can be no doubt that it draws off serum by capillary drainage, and I find that it is the serum which produces serious results. Therefore, if we can draw off this serum and prevent it distending the uterine cavity, we have attained a good deal. For this reason I have used it with success, but I employ it as much for the purpose of keeping the walls of the uterus apart as for drainage. Disease of the adnexa must always be excluded before a uterine tube is introduced.

Dr. LEROY BROUN: I have never used uterine tubes and I do not think I will. If the uterus is anteflexed it is my habit to do the operation of Dudley of Chicago, which has been performed with sat-

isfactory results in some hundred cases at the Woman's Hospital. This operation resembles the old posterior section of Sims, and results in transferring the exit of the canal back into the cul-de-sac, thus re-establishing the drainage, the cessation of which has caused all of the symptoms. The only objection to this operation is that it disfigures the cervix somewhat.

After the cleansing of a uterus following an early miscarriage it is my habit to pack lightly the uterine cavity with gauze. This only remains for twelve to twenty-four hours, and is used in order to bring away, when removed, such débris as may have been left in the uterus.

Dr. VINEBERG: In justice to Dr. Dudley, I wish to say that I have recently received a communication from him in which he states that he has so modified the operation that it does not disfigure the cervix. I have employed the procedure in seven or eight cases with excellent results.

Dr. RALPH WALDO: I have used a great many tubes, and formerly I packed the uterus with gauze after curetting. I now employ gauze packing *only* when it is necessary to control severe hæmorrhage which threatens the patient's life for the time being. It is also of service in cases in which the uterus has lost its tone, from sepsis, perhaps, and in which there is a persistent oozing from the uterine surface. Under such circumstances I pack the uterine cavity as firmly as possible, leaving the end of the strip of gauze lying loosely in the cervical canal. This packing is removed at the end of twenty-four hours.

THE PRESIDENT: Five or six years ago, when gauze drainage was being strongly advocated, I read before this Society a paper on uterine drainage, and advocated this drainage-tube and opposed the use of gauze as a drain. Not more than one or two of the members backed me up. Since then, as I expected, gauze has been almost entirely discarded. During the past fifteen or twenty years I have studied the question of uterine drainage in all its phases and I have tried all methods. The instrument which I advocate is not a stem pessary. I first used it seventeen years ago, and have worked on it and modified it for years. I first used strands of wire; now I employ a hollow stem or tube of hard rubber. Recently I have had them made of aluminum, but do not find them so satisfactory as those of hard rubber. I use these tubes in cases of sterility more for the purpose of keeping the canal open than to hold the uterus straight; for that matter, I have used curved tubes and have found

that they relieve the dysmenorrhœa and cure the sterility as well as the straight ones. At first I did not allow the patients to wear them any length of time, but some students who came here from Canada went home and, thinking that the tubes could be worn for months, permitted their patients to wear them through menstruation. This was followed by such successful results that I have tried it with my patients, and I now let them go to their homes in distant parts of the country wearing the tube. The method I employ is as follows: When a patient comes to me suffering from dysmenorrhœa and sterility, if the os is sensitive (and this is an indication for the tube), after excluding disease of Fallopian tubes and other complications, I put her under ether, curette the uterus thoroughly after dilating freely but not enough to split the cervix, and introduce the fenestrated drainage-tube. I also insert a retroversion pessary to keep the tube in place by holding the os uteri backward. No gauze is employed. A vulva-pad is applied, and the patient put to bed, where she is kept quiet for a week. She is then allowed to get up and move about her room for several days. The tube is then removed and if she menstruates without pain at her next period, nothing more is done. If she does have pain, several months later I curette again and introduce a smaller tube, keep the patient in bed for a week, and then let her go home wearing the tube, enjoining her to keep the parts clean by an occasional douche. After the patient has passed through two or three periods, the tube is removed. Of course, all cases in which there is tubal disease are excluded. I have never had a case in which salpingitis or sepsis followed this treatment, although I have been employing it for ten years. I can take ten cases of typical dysmenorrhœa, with anteflexed uteri, and in a few weeks I will cure half of them; in a few months nine out of ten can be cured. In rare cases the treatment has to be repeated a third time. In sterility the results of this treatment have been marvelous. I have cured of sterility women as old as thirty-nine. Last year I have successfully treated twelve cases of sterility. All are pregnant or have had children. More than half of these cases had been treated for sterility by eminent gynæcologists. The treatment is safe and successful. I do not know of anything which has pleased me more than the fact that the members of this Society have or are coming around to my way of thinking about uterine drainage.

In regard to irrigation, I agree with Dr. Jewett that there is no necessity for washing out the uterus in these cases unless septic

symptoms are present. In minor operations upon the uterus, I wash out the vagina at the time of operation, but not after.

Dr. VINEBERG: What do you do in cases in which the sterility is due to the husband?

THE PRESIDENT: In my experience I have found that among the better classes the man is rarely to blame for the sterility. However, if prolonged treatment of the wife does not result in her becoming pregnant, I turn my attention to the husband.

Dr. PORTER, in closing: In regard to the question of whether there is any discharge from the cervix in cases in which no drain is employed, I have made several tests with a test-tampon to ascertain the amount of discharge which takes place after operations upon the uterus. The results obtained were sufficiently marked to convince any of you that there is a discharge.

In regard to Dr. Robert Wylie's and Dr. Collyer's criticism of the tube, they evidently do not understand the object of the hollow arm. It is *not* intended to facilitate irrigation, but to enable one to clear out the slot, which occasionally becomes obstructed. This occasional blocking up of the slot is practically the only objection to the tube, and to overcome this I have had one arm made hollow in order that the tube may be flushed out. The fenestration of the flange is also an advantage.

With reference to the use of gauze, I never employ it as a drain. I use it in some cases because it favors contraction and involution.

In regard to Dr. Vineberg's objection to leaving in the tube for any length of time, I agree with him that harm might occur if the patient is not kept under observation.

As to the criticism made by Dr. Jewett and the President in regard to irrigation and cleansing of the genital tract, they evidently have more faith than I have in the aseptic condition of the average vagina. To my mind it is very necessary to thoroughly cleanse out the vagina and to balloon it out in order that the irrigating fluid may reach every part of the canal. I am also in the habit of making an application of a strong solution of formalin before introducing the tube.

To Dr. Broun, I can only say that I hope he will try the tube. I am sure he will be pleased with it.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, March 3, 1898.

The *President*, CHARLES P. NOBLE, M.D., in the Chair.

A Minute upon the Death of Theophilus Parvin, M.D.

BY WILLIAM H. PARISH, M.D., was read by the Secretary.

Dr. Parvin was one of the most esteemed members of the Philadelphia Obstetrical Society. Soon after he came to Philadelphia in 1883, he was elected to membership, and he added repeatedly to the interest of its meetings by the papers he read and by the part he took in discussions. With honor to us he also served a term as our President.

The most of our members were personally acquainted with him—a few intimately. His commanding figure, commanding even when bowed with the weight of more than three score and ten years, was a familiar object. We listened to his papers and his discussions always with unflagging interest and often with considerable profit. We enjoyed his finished English, his lucid arguments, and the usual correctness and the unvariable honesty of his views. We recognized and often wished we possessed his cultured and well-trained intellect, his powerful and richly stored mind. We knew of his devotion to our profession, of the earnestness and success with which he studied and practised in those departments of medicine in which we are most interested. Side by side we felt that he and we were working in a noble and a common cause.

We know that he was receiving the honors of an appreciative profession; we saw him at different times one of the faculty of some of our most eminent colleges. We saw titles of honor conferred upon him by institutions of learning, and we heard the echoes of his fame as they came to us from remote portions of the medical world. We saw his writings recognized as authoritative in the medical profession. We saw and heard these things and we rejoiced that they were so.

His literary researches were not limited, however, to the writings of medical men, but he loved and lingered with the poet, the historian, and the cultured literary writer generally.

When we turned our eyes upon his private life, we saw his family love, his generous friendship, his Christian characteristics. We saw him living a life simple, strong, and pure.

Certainly, he had his imperfections, professional and personal, but they were insignificant.

The name of Dr. Theophilus Parvin will remain through generations, the pride and the honor of this Society, the pride and the honor of the medical profession of America.

A Case of Ruptured Extra-uterine Pregnancy Complicated by Dermoid Tumor; Operation and Recovery.

Dr. THEODORE A. ERCK: D. J., 22 years of age, single. Puberty occurred at 13 years, her menses were always regular in time, lasting three to four days, never profuse nor painful. She had missed her period in November, and on December 26, 1897, had purchased some medicine at a pharmacy for the purpose of bringing on her period. On January 5th, she had an attack of agonizing pain in the pelvis accompanied by a moderate uterine hemorrhage. Her flow continued intermittently until January 24th; she kept on with her usual duties as a servant, however, and claims to have been unable to sleep on account of the almost nightly recurrence of pain, which caused her a great deal of nausea. She never vomited nor was there ever any syncope. She had not observed any decidual shreds.

On January 24th she consulted her physician, who told her she was having a miscarriage and prescribed for her. She was admitted to the Frederick Douglass Memorial Hospital, and came under my care on February 1, 1898. An examination under anæsthesia revealed the uterus in a normal position, somewhat enlarged. The cervix was softened; the cervical canal not patulous. A boggy, vascular mass filled the right side of the pelvis and the space posterior to the uterus, fixing the latter. Taking into consideration the menstrual irregularity, the intense pain and persistent nausea, the sensitive breasts, and the physical signs, a diagnosis of unruptured tubal pregnancy was made and immediate operation urged. Her physician, wishing consent of patient's relatives, objected, so patient was permitted to come out of anæsthesia. Operation was performed on the following morn-

ing, the patient, in the interval, being carefully watched, presented no evidence of anything unusual—in fact felt much better—the only thing suspicious was that her pulse, which had been 80 previous to the examination, ran up to 110, but gradually diminished to 90 at the time of operation. The abdomen, which on the previous day had been flat, was now distended, and as soon as opened huge clots and much free blood were encountered. Enucleation of the sac was difficult and occasioned some bleeding. It was found to be intimately adherent to a mass on the opposite side of the pelvis. It was finally freed, a ligature applied, and excised. Attention was now directed to the mass on the opposite side, which was found to be a dermoid tumor of the left ovary, about the size of an orange, firmly adherent to the surrounding viscera. It was carefully enucleated and removed. The fœtus was not found. The toilet was made in the usual manner and the abdomen closed without irrigation or drainage. The pulse after operation was feeble and rapid, running as high as 140. A pint of normal salt solution was introduced beneath the mammary gland, this promptly increased it volume and reduced it to 120. The patient passed through a normal convalescence.

This case is of interest on account of the dermoid tumor of the opposite side, which rendered diagnosis difficult and greatly enhanced the difficulty of operation. In a cursory examination of the literature I have failed to find record of a similar case. The fact that both ovaries had to be sacrificed in the removal of these conditions, from so young a woman, was cause for regret. The uterus was not removed, as there was no evidence of uterine disease and no reason in the mind of the writer why a woman already depressed from concealed hemorrhage, should be subjected to an increased element of shock by thus prolonging the operation.

Discussion.

Dr. J. M. Fisher: I am especially interested in the case reported owing to the tumor that complicated the ruptured pregnancy. I was called to see a patient several weeks ago in consultation with Dr. Duval in the southern portion of the city, and from the history of the case and the appearance of the woman I was convinced of the fact that she had suffered from an internal hemorrhage sometime previously. I found that the lower portion of the abdomen presented dullness on both sides as well as in front, and, on making a pelvic

examination per vaginam, I was convinced that the mass I felt was a large quantity of blood that had been poured into the abdominal cavity. I advised operation, and patient was sent to Jefferson Hospital. The following morning Dr. Montgomery made an abdominal section, and the first thing he encountered was an ovarian tumor the size of a child's head, and after bringing up and ligating this a considerable number of blood-clots were turned out, and on directing his attention to the opposite appendage he found this to be the seat of a ruptured tubal pregnancy. My impression is that upon making the pelvic examination in this case I located the mass more particularly on one side, and came to the conclusion that rupture had taken place into the folds of the broad ligament which, to my surprise, however, proved to be a cystic growth, while the opposite tube, which I had supposed to be intact, was ruptured.

Dr. FRANK W. TALLEY: I listened with considerable interest to the report of Dr. Erck's case, and wish to congratulate him upon having made the diagnosis of extra uterine pregnancy before rupture, even though he did not have an opportunity of operating before rupture. The case impresses the fact that operation should follow as quickly as possible after the diagnosis of extra-uterine pregnancy has been made. In connection with the discussion of Dr. Erck's paper, I would present also a specimen of extra-uterine pregnancy which I removed last Monday at the Polyclinic Hospital. The diagnosis of extra-uterine pregnancy was made and the operation was performed before rupture took place. The case was that of a girl 22 years of age, who had given birth to one child and had had four miscarriages. I refer to this as opposed to the belief that tubal pregnancies are ingrafted upon exfoliated or diseased tubes and after long period of sterility. This patient had had a miscarriage in November. In January she again believed herself to be pregnant, and about three weeks ago she fell down a flight of steps, striking her abdomen. This was followed by a flow of blood from the uterus and the passage of some clots and shreds. She did not recover her health, however, after the passage of the clots, and supposed that she had had an incomplete abortion. I had the pleasure to see her with Dr. Craig last week. At that time the examination of the cervix showed a canal which was narrow and no evidence of recent dilatation, such as the passage of an embryo would occasion, uterus enlarged, and at its left side a mass about the size of a lemon. The patient had considerable pain. With the history of supposed pregnancy and of having passed membranes from the uterus, from the condition of the

cervix not indicating the uterine pregnancy, and from the easily recognized vascularity of the tumor, I concluded that the case was one of tubal impregnation. The specimen is rather interesting from the fact that the tube is apparently healthy. The fimbriated end of tube loses itself in the sac containing the embryo. The ovary is flattened out and forms a part of this sac. On the inner surface of the ovary is a small ruptured blood-cyst which is probably the corpus luteum of the present pregnancy. Upon opening the sac an embryo about two inches in length shows itself. The walls of much of the sac are apparently formed of thin peritoneum. Such a condition, I think, is either an impregnation in the fimbriated end of the tube which had previously attached itself to the ovary, or the impregnation of a hollow fimbrium, or the impregnation of an ovarian sac, which is often well formed in the human species. Probably the theory of impregnation of an ovarian sac is the most plausible one.

Dr. E. E. MONTGOMERY: These cases are extremely interesting from the diagnostic standpoint. I was particularly impressed with the difficulty in diagnosis in the case related by Dr. Fisher. The woman, unaware that she had an ovarian cyst, supposed herself pregnant. All the symptoms of internal hemorrhage were present and the rupture evidently occurred a few weeks before the time she came under Dr. Fisher's observation. At the time the operation was done, the abdomen was considerably distended. A mass could be felt. The tumor formed a part of the wall of the encysted sac, which contained the accumulated blood Knowing that we had to deal with a chronic condition and feeling that by an incision through the vagina I could best obtain my object, I opened into the Douglass' pouch, turned out a considerable clot and was able to distinguish the enlarged tube upon the right side which entered the sac. On the left side I recognized the wall of the cyst as forming part of its barrier. The size of the cyst was such that it could not, without being punctured, be brought through the vagina, and as we were unacquainted with its relations we felt it better to make an abdominal incision. After making the incision, rather for the purpose of disturbing Dr. Fisher's certainty of diagnosis, I first drew out the cyst, subsequently raised up the ruptured sac in the right tube. The physician may very easily be in doubt as to whether the condition is one of ruptured tubal gestation, ruptured ovarian cyst, or other pelvic collection. I wish to second what Dr. Talley has said in regard to the importance, wherever diagnosis of unruptured tubal gestation can be made, of

urging prompt operative interference. Such a condition demands operation just as much as if the patient was suffering from a malignant tumor. A case of the kind came under my observation a few years ago; the patient was brought into the clinic suffering from pain and distress in the pelvis. I found a retroverted uterus, and to its left a mass beneath which there was distinct pulsation. The patient had ceased to menstruate for a couple of months. The cessation of such symptoms made me feel certain we had to deal with a tubal gestation which was not ruptured. The physician who brought her to the clinic desired to make an examination. While he was doing this, I left the room, but was called back a few minutes later to find the patient covered with cold respiration, with pinched countenance, sighing respiration, and almost pulseless, all the indications of complete relapse. Diagnosis of ruptured tubal pregnancy and internal hemorrhage was made. The condition was explained to her daughter who accompanied her, but she was unwilling to take the responsibility of granting an operation, therefore I sent my carriage for her husband, and on his arrival explained the situation to him and gained his consent. The patient was at once subjected to operation, and although we secured the bleeding vessel the patient succumbed from the effect of the hemorrhage and died a couple hours later. The abdominal cavity contained considerably over a quart of fluid blood. Such cases without question justify the importance of immediate resort to operative interference.

Dr. L. J. HAMMOND: I am much interested in this subject because I have on several occasions erred in my diagnosis. After, however, combining the previous history with the physical signs present at time of examination I have been more successful. The history, which has been in three cases a long period of sterility after several abortions, and then absence of menstrual periods for, say two or three months, with the additional fullness on one or the other side, enabled me in the last three cases I have seen to make my diagnosis correct. Therefore, I have felt by examination alone it it almost impossible to determine tubal gestation, but that the history will greatly aid us.

I would like to ask how Dr. Erck determined this tumor a dermoid cyst, as it does not present the appearance of having been opened, and the exterior resembles an accumulation of small cysts.

Dr. ERCK: The cyst when removed was liquid. Hair and bones could be felt in it.

Dr. E. E. MONTGOMERY: At the last meeting of this Society I reported a case and said that her urine contained a considerable

amount of albumen. I felt uncomfortable in making the report, as it included two operations on the kidneys, and with this symptom some two months subsequent. The patient, however, since tells me she had an attack of grippe and the albumen has entirely disappeared from the urine, and at present there is entire absence of any other abnormal symptoms, showing it was only temporary in character. I was rather nonplussed at the time for the reason that she went away from the hospital free from trouble, and I feared lest by interference with both kidneys I had done her injury instead of good.

Official Transactions.

FRANK W. TALLEY, *Secretary.*

TRANSACTIONS OF THE WOMAN'S HOSPITAL SOCIETY.

Stated Meeting, March 15, 1898.

The *Vice-President*, LEROY BROUN, M.D., in the Chair.

Large Ovarian Abscess.

Dr. JOHN ASPELL: This specimen was removed from a woman 30 years of age, who gives a brief story of her illness. She has been married three years but never pregnant. Up to the time of her marriage she enjoyed perfect health. At the end of a few months of her married life she began to experience pain across the abdomen and a general loss of strength and weight. In about a year an increased size of the abdomen was noticed and the pain became more intense. The menstrual periods became irregular and painful and the discharge scanty. The abdominal enlargement increased until the whole abdomen was a bulging mass. On account of an inability to retain nourishment, her emaciation became extreme. Her fears of an operation prompted her to put it off from time to time until her depressed condition made it necessary. The specimen is presented for the following reasons: (1) Because of the large size of the pus-sac; (2) to show its thick wall; (3) because of the numerous discs of lymph thrown out by the peritoneum to prevent the absorption of pus—they lined the peritoneum very much like scales in their overlapping; (4) because the pus was confined to one ovarian sac; (5) because of the unusual site of the opposite ovary, it having broken away from its moorings and was found attached to the omentum above the level of the umbilicus—a true wandering ovary.

DISCUSSION.

Dr. GEORGE H. MALLETT: The case is a most remarkable one. I never saw such a large ovarian abscess.

Dr. NATHAN BOZEMAN: I would like to ask Dr. Aspell if he ruptured the abscess in removing it.

Dr. ASPELL: The patient was turned on the side and the sac punctured with scissors. The pus was evacuated before I removed it from the abdomen.

Dr. BOZEMAN: I once operated upon a large ovarian abscess which ruptured during removal and the pus escaped into the peritoneal cavity. No trouble followed, however.

Dr. J. D. BISSELL: I would suggest the possibility of the specimen being an ovarian tumor which broke down. I have seen a case in which the inner portion of the tumor became necrotic, and peritonitis and death followed operation, the fluid having escaped into cavity. In regard to the case under discussion, it is very uncommon to find gonorrhœal infection in the ovary and not in the tube.

Dr. E. W. PINKHAM: I think it would be very unusual to find gonococci in the ovary if there were no evidences of infection in the tube. I do not think they have ever been found in the ovary alone.

Dr. P. F. CHAMBERS: The specimen impresses me as one of infected ovarian cyst rather than an ovarian abscess.

Dr. W. GILL WYLIE: I would pronounce it a cyst of some kind. Although no pedicle is to be seen, there may have been a small one which may have become twisted, thus causing the fluid to change its character. It probably began as a simple cyst and became infected afterward. Its wall is that of a cyst, not that of an abscess. A twisted pedicle is much more often the cause of trouble than is generally supposed, and I always suspect this condition as soon as I can make out any form of tumor and the formation of pus. In such cases I believe in operating at once in order that the process may be arrested, instead of waiting for the acute symptoms to subside. Since I have employed this method I have been struck with the number of cases in which the peritonitis was due to the twisting of a cyst on its pedicle.

Dr. ASPELL: I have nothing to add, except to thank the fellows for their suggestion that it may have been a cyst. There may originally have been a pedicle, although none was found at the operation, and this may have become obliterated.

Fibroids of the Uterus.

Dr. L. GRANT BALDWIN: The points of interest in these two specimens are these: It used to be, and still is to some extent, the teaching that fibroid tumors of the uterus are harmless after the menopause, and that they then become smaller and cease to be a menace to their possessors. These two cases prove that this is not always the case. The first specimen was removed by supravaginal hysterectomy from a woman 50 years of age, mother of several children,

in whom the menopause occurred two years ago. She never had menorrhagia, but during the eight years prior to the menopause the periods came too soon, although bleeding was not profuse. The indication for operation was persistent, unbearable pain. After the uterus was removed it was found to be calcareous all through. No peritonitis had developed as yet, but I can easily see how it might have soon occurred.

The second specimen is very much like the first and the history is similar. It was removed from a single woman, 40 years of age, who had never been pregnant. The patient had been ill for three years. The menopause occurred one year ago. Menstruation had been profuse but free from pain. The indication for operation was the patient's inability to be on her feet. This fibroid tumor was attached to the uterus by a long pedicle, and the uterus was studded with small fibroids and was removed. The growths were all calcareous. The method employed was to clamp each broad ligament and then cut away the uterus and new growth; the arteries were all tied separately and the broad ligament sewed up with catgut, no tissue being tied in mass.

DISCUSSION.

Dr. CHAMBERS: I think I understood Dr. Baldwin to say that in the second case the patient was but 40 years of age and yet had passed the menopause. It seems to me that this is rather unusual, especially in a woman who has a fibroid of the uterus My experience has been that this tends to delay the menopause rather than bring it on early. The case is very interesting on this account. I cannot recall a similar one. When women with fibroids come to me, I generally tell them that the menopause will in all probability be postponed for from two to four years.

Dr. W. GILL WYLIE: I think Dr. Chambers' remarks are true in regard to the effect of the menopause. Menstruation will continue and the tumor will grow after the woman has reached the age of fifty in some cases. In those cases in which menstruation does cease, trouble is apt to begin, for the tumor takes on degenerative changes. There is no doubt that they undergo degeneration and sometimes act as foreign bodies. I recently had a case in which the fibroid never caused trouble until after menstruation had ceased. The tumor was a hard, solid one which filled up the uterus. The patient was 67 years of age. Hysterectomy was performed and the woman recovered. Examination of the uterus showed that the tumor was hard

and filled the whole uterus, and from the right cornu numerous new growths, apparently malignant, hung down. An interesting feature in connection with this case is the fact that four months after the operation a mass the size of the little finger appeared on the vaginal wall. A section was sent to Professor Welch of Baltimore, who pronounced it cancer and advised its removal. This was done but another soon appeared. The case was primarily one of fibroid, then calcareous degeneration, and finally malignancy.

As long as fifteen years ago I used to remove the tubes and ovaries to cure hæmorrhage in cases of fibroid tumor of the uterus. This relieved the hæmorrhage, but the tumors have been a burden ever since. In some of these cases there is an ichorous discharge which is very irritating to the cervix and vaginal wall. In some cases it produces an erosion of the cervix which most men would be inclined to pronounce a malignant condition. I recall quite a famous case—that of a Southern woman who came to New York for advice. She was seen by several men, and they all pronounced the disease cancer. I made a diagnosis of fibroid and said that the condition of the cervix was caused by the discharge from it. I removed a section of it and sent it to a pathologist who declared it to be non-malignant. That woman is well to-day. Such cases are not at all rare. In some cases chills and fever will develop, and in these I have even opened the cul-de-sac and drained the fibroid. The more I study fibroids, the more I think we ought to remove them. If the woman can be kept under observation and if the tumor causes no special trouble, operation can be postponed for a time.

Dr. W. Evelyn Porter: I have always been in favor of complete extirpation until within the last four or five years. Some years ago I looked up the literature of malignant disease of the uterus and also consulted a number of pathologists. The latter stated that they rarely meet with malignant degeneration occurring in fibroid growths, and some were rather skeptical as to whether it ever does occur. All agreed that it is the rarest thing in the world. At present I believe the same men if questioned would express a different opinion. At the New York Cancer Hospital we certainly see cases of the combined condition—fibroids in which certain sections show malignant disease. However, Dr. Outerbrodge and I have done many myomectomies leaving as much as possible of the uterine tissue, and the results have been very gratifying. In no case has there been malignant degeneration. Whether hysterectomy or myomectomy should be done depends upon how much uterine tissue can be left behind

with advantage to the patient. I think the nervous symptoms are apt to be much less annoying if part of the uterus can be left. My experience has certainly led me to feel strongly in favor of leaving as much *normal* tissue as possible.

Dr. CHAMBERS: Dr. Wylie's remarks are very interesting to me for the reason that, from a theoretical standpoint, I have always been opposed to the operation which was so commonly employed several years ago—removal of the appendages in cases of fibroid of the uterus. It was very generally employed even up to five years ago on the ground that it cut off the blood-supply, and that the fibroid would then shrivel. I have watched some of these cases, and, while I have not seen such marked cases as Dr. Wylie has observed, I have seen many which were not benefited by the operation. I think that the position taken by Dr. Wylie is the proper one.

Dr. WYLIE: I would not like to go on record as saying that all fibroids should be removed. I have seen fibroids in young women where I would not advocate hysterectomy. I have seen such cases go on without trouble and even become pregnant. In women over thirty-five I would remove the tumor. If these fibroids are watched for years it will generally be found that degeneration takes place. I now never advocate removal of the appendages in cases of large fibroids. Years ago I had at Bellevue Hospital a very large woman with a fibroid. I tied off the appendages in order to cut off the blood-supply. Within six weeks the tumor died, became necrosed, and it killed the woman. At that time it was not considered justifiable to remove the uterus. I also recall a case seen by Drs. Jewett and Skene of Brooklyn, both of whom had refused to operate. The woman was brought to me upon a mattress. She was so exhausted from loss of blood that her condition would not permit of a radical operation, so I curetted and took out the appendages. She recovered from the operation but has suffered ever since. She has an ichorous discharge from the uterus which has caused ulceration of the vagina, still she will not consent to removal of the uterus.

Dr. LEROY BROUN: I have been very much struck of late by the number of patients who come back to the clinic after operation and complain that they have a good deal of pain. They have been operated upon at various hospitals and were apparently cured when discharged, but pain soon begins, sometimes it is more severe than before the operation, and they come back to the dispensary to get relief from this pain. These operations are indicated and we have to do them, but it is a fact that in a number of instances the symptoms are

not relieved. This is all very well in dispensary practice, but it will not do in private practice.

I think that in cases of fibroid tumor the patient will make a better recovery if we do myomectomy than if we do hysterectomy. I have always held the opinion that in pus-tubes the uterus also should be removed. Still, I do not think we have got at the bottom of it all.

Dr. CHAMBERS: I think a great many of these bad results are due to the method in which hysterectomy has been performed. The method which most operators employ of ligating the vessels *en masse* and leaving a large stump in the peritoneal cavity is often the cause of pain in these cases. I am so convinced of this fact that I have been very careful in my recent operations to do the operation as described in the paper I read not long ago. I never leave a stump. I pick up each artery and tie it separately, leaving no large mass which may include nerves. Not long ago we had a case at the Woman's Hospital in which the patient complained of so much pain that we re-opened the abdomen and found a stump in which there was an old ligature, near which were a number of little nodes which we took to be neuranagennema (?). These were removed and I predict that the woman will have no more pain. I have seen cases in which I knew the pain was due to the stump, for bimanual examination showed it to be exquisitely sensitive. The majority of operators are not careful enough. The broad ligament should never be tied *en masse*.

Dr. MALLETT: There seems now-a-days to be a tendency among operators to conserve part of the ovary and tube in cases of myoma. This seems to be very wise, for it apparently prevents the nervous symptoms which are apt to follow total extirpation of these organs. Numerous operators have reported cases in which the nervous symptoms and the senile vaginitis which follow removal of the uterus and appendages have been prevented by leaving as much as possible of the tissue.

Dr. BALDWIN: In regard to the second patient, who had the menopause early, she had not menstruated for thirteen months. She was a single woman, 40 years of age, and the uterus was not much larger than my thumb. She never had any hæmorrhage.

New Hysterectomy Forceps.

Dr. BALDWIN: In connection with the two cases just reported I

would like to show a new hysterectomy clamp devised by Dr. Jarvis S. Wight of the Long Island College Hospital. One blade is fenestrated while the other has slanting teeth. It is long enough to clamp off the whole broad ligament. Dr. Wight first used this blade as a pile clamp. The objection has been raised that the teeth will cut and cause bleeding. This, however, is not the case. The absolute security with which it holds the tissues renders it unnecessary to clamp it as tight as an ordinary clamp. It is the only clamp I have ever seen which *can be depended upon to hold tight the tissues which it is made to grasp.* I have also used them in many cases of vaginal hysterectomy with the greatest satisfaction, rarely is more than one pair needed for each side, and they are removed with perfect ease. They are so made that the pressure is the same throughout their entire length.

DISCUSSION.

Dr. WYLIE: I think this clamp might be very useful for the purposes referred to, but I would not like to use it in vaginal hysterectomy. I would be afraid of the long teeth.

Dr. BISSELL: Is it easy to withdraw this clamp?

Dr. BALDWIN: They are easily removed. All that is necessary is to open them; there is no twisting motion required. I have used them a number of times. They are left on twenty-four to forty-eight hours, and no hæmorrhage follows their removal. Only two pair are used, one on each side.

Sterility.

BY W. GILL WYLIE, M.D.

(See page 741.)

DISCUSSION.

Dr. ASPELL: I can add nothing to the subject save to say that I have never before heard the method so clearly explained. I have had no experience in treating an ill-developed uterus with this form of drainage.

Dr. E. E. TULL: In regard to the relation between ill-developed uteri and sterility, a few years ago I saw five or six cases in clinic practice in which the arrested development could be closely connected with scarlet fever occurring at about the time of puberty. The patients were apparently healthy women, but menstruated very

imperfectly, one or two only a few times. Dr. Wylie's logic in regard to drainage of the uterus appeals to me, although I use gauze in preference to stems.

Dr. GEORGE T. HARRISON: I have been very much impressed by the success with which Dr. Wylie has met. Notwithstanding this, I am not prepared to accept his as a recognized method of treatment to be given out for general adoption, for I think it is contrary to the principles of modern surgery for the reason that forces are set in motion which cannot be controlled. It is almost impossible to keep an intra-uterine stem aseptic. I think this is the greatest difficulty. In years gone by I have used stem pessaries, usually of glass, and have never seen harm follow their use in my hands, but I have seen cases in the practice of others in which disastrous results have followed. Of course, Dr. Wylie says that he makes it a cardinal point to be thoroughly aseptic in his work. But if you leave it to the woman to keep the vagina clean, it probably will not be done. The cervical canal, we know, is usually free from pathogenic germs. In regard to the etiological factors which the author has brought forward, I agree with him in reference to imperfect development, but I would not give it the prominence which he has given it. In these cases there is more apt to be retroflexion than anteflexion or anteversion.

Dr. CHAMBERS: The treatment of stenosis by means of a stem is not by any means new. For ten or more years I have been employing this method according to the directions laid down by Dr. Thomas. The glass stem has given the best results in my hands. Some of these are straight and others are curved. Their advantage is that they can be boiled and made absolutely aseptic. Hard-rubber stems cannot be boiled. I have employed divulsion, curetting, and the stem in many cases. The method is not difficult. I have left the stem in the canal for a month or two months with no bad result. Still, I prefer not to send away a patient who is wearing a stem, for fear that something might happen and harm result. I keep the patients under observation while they are wearing the stem. It causes no inconvenience during menstruation. In most cases I also introduce one of Dr. Thomas' pessaries with a cup attachment, which holds the stem in place. Unfortunately, my results in regard to the cure of sterility have not been so good as those of Dr. Wylie. Pregnancy has followed in some, but not in a large percentage of the cases. Still, I am convinced that it is the only method of treating these cases.

Dr. PAUL F. MUNDÉ: I confess that Dr. Wylie's paper reminds me a great deal of a revival of ancient history. In the first edition of my book on "Minor Surgical Gynæcology," published in 1880, will be found pretty much all that he has said, and some of it will be found in the edition of 1885. Since then I have often said that if I ever rewrote that book I would leave out about one-third of it, and part of that one-third would include all that has been said about stem pessaries. I used to believe in the stem pessary, but now I believe with Dr. Emmet, that they are the invention of the Evil One. I have not used them for many years, nor did I suppose that any modern gynæcologist used them. The fact that Dr. Wylie still employs them may induce me to try them again.

I do not agree with the author in regard to his dilator, for it does not seem to me necessary to dilate the cervix until it is in danger of tearing. I use the Palmer dilator, which is a modification of the Ellinger, and which I first introduced into this country. I usually divide the internal os with a slender bistoury in several directions, and never employ a dilator as strong as that of Dr. Wylie. A funnel-shaped opening is made at the external os by crucial incisions and wedge-shaped excision of the flaps, and the cervical canal is packed with iodoform gauze, which is renewed every forty-eight hours. In order to keep the canal open a stem would be better than gauze, but I do not see how the stem can be kept aseptic. I used to think this could be done. I have had very good results during the past ten years with my present method. This was suggested to me by the articles on chronic endometritis written by Dr. Polk. I always begin by curetting, and after the operation I have the patient come to my office once a week for five or six weeks in order that I may pass a large Peaslee sound. In this way the canal is kept open and straight. But if any man can get a sharply anteflexed uterus to remain permanently straight, I would like to know it. So long as the canal is patulous, it does not so much matter whether it is straight or not. I cannot agree with the gentleman who uses a stem and a pessary to keep the former in place. My results have been fairly good and I have seen but little peri-uterine inflammation. Still, it is very risky business to meddle with the uterine cavity. I have seen some very bad inflammations follow the use of the uterine stem. I once saw a woman who, after discission, dilatation, and stem, developed an imflammation which kept her in bed for eight months.

Dr. CHAMBERS: If an aseptic stem is put into the uterus, the

uterus will not become septic. The introduction of that stem will not produce sepsis. If the sepsis is already there why, then, it is a different matter.

Dr. MUNDÉ: May I ask if Dr. Chambers excludes traumatism caused by the introduction and the presence of the stem in the uterus as a cause of peri-uterine inflammation.

Dr. CHAMBERS: I have never had any traumatic injury following the use of the stem.

Dr. PORTER: I think we are very fortunate in having Dr. Mundé here to-night, for his criticism of the paper has brought out most admirably the important point which Dr. Wylie has emphasized, *viz.*, drainage. Dr. Mundé's remarks apply to the solid stems, such as were formerly used. Dr. Wylie does not use these; he uses a hollow stem, which is in reality a drainage-tube, and it is for the purpose of drainage that he uses them. The old stems were usually solid; if not, they had little perforations in them or a small hole in the end and were useless so far as drainage was concerned. With the stem used by Dr. Wylie, the whole principle is different and the results are different.

I have recently devised an instrument which I think has an advantage over the ordinary hollow stem, in that it is so constructed that it overcomes the one objection which is met with in every form of hollow stem, *viz.*, occlusion of its lumen by mucus or blood-clot. If the vagina and uterus are aseptic before the tube is introduced and an ordinary occlusion dressing is applied, there is no danger whatever of sepsis. Now, in regard to traumatism. Whenever I speak of uterine stems, men tell me that they are afraid of them; that they have used them and have had bad results. When I ask them what kind of stems they have used, they reply: "Solid stems." The object of the hollow stem is to afford drainage. I believe that not only in this class of cases, but in many forms of uterine disease in which drainage is indicated, this instrument will be found superior to any kind of gauze drainage. For sterility, I have employed it with almost as good results as those reported by Dr. Wylie. There is no danger of the tube doing mechanical injury where there is no solid substance, such as the cup pessary, for the tube to press against. I think the dangers associated with the use of this instrument are greatly over-estimated. It is certainly *not* contrary to modern surgical principles.

Dr. MUNDÉ: Dr. Porter has laid great stress upon drainage by means of the hollow stem. There must be a certain amount of drain-

age when the solid stem is worn, as is shown by the fact that the late Dr. Goodell reported twelve cases in which conception took place while the solid stem was being worn. If the spermatozoa can enter the uterus under such circumstances, why cannot the discharges escape?

Dr. HARRISON: After all, I think we must all admit that the great point is to cure the endometritis. If you can cure this, you cure the sterility. Dr. Wylie starts out to do this in the proper way by thoroughly dilating and curetting the uterus. So far as drainage is concerned, I do not want it. The object is to treat the uterine cavity as a dentist fills a tooth—pack it tight. After curettage the uterus should be packed tight and not drained. Gauze is put in first to absorb the discharges and to prevent hæmorrhage. As for drainage, I do not expect to get it and do not want it.

Dr. BISSELL: I would like to say a word in regard to the comparative merits of the dull and sharp curette. In my hands the dull curette has been of but little service. I recognize the danger of penetrating the uterine wall with a sharp curette when operating upon a cancerous condition or a condition the result of a miscarriage; but in ordinary endometritis I consider the danger trifling and that this instrument alone does effective work.

Dr. MALLETT: I would like to ask Dr. Wylie if he would employ the uterine stem in cases of salpingitis. I have a patient who complains of pain in the side. The ovary and tube can be felt, and the uterus is hard and atrophic. She also suffers from acute dysmenorrhœa. She has been curetted, but had not derived any benefit from it. Would the stem be followed by good results? My experience is that the uterine canal contracts as soon as the gauze is removed, and it becomes exceedingly difficult to pass anything into the uterus.

Dr. WYLIE: I have never made it a practice to employ this treatment in cases of salpingitis, unless one side only is affected, and that not acutely. I would not expect to cure sterility in a case in which salpingitis is present.

I will not try to convince Dr. Mundé. I speak of a method and of instruments which I advocated in an article fifteen years ago and which he himself edited, for the articles appeared in the journal of which he was editor. I brought this mater forward to-night for the benefit of the younger men. I have been employing it for nearly twenty years. I do not write about any subject until I am pretty sure of what I am saying. I do not think I have ever written anything which I have had to take back. I believe that this method will

come into prominence again. I admit that I had the same feeling which Dr. Harrison has expressed, and I at first employed the method very tentatively. I have had results in obstinate cases which show the method to be a good one, and it is in just these obstinate cases in which I have left the drainage-tube in for one or two months and have effected a cure. As to the danger connected with it, I have never seen it produce an attack of salpingitis or perimetritic inflammation. I make use of the method several times a week, but I never do the operation in my office or without an anæsthetic. I do not claim, as do some, that gynæcology is a simple thing, nor do I think that a man can listen to a paper like this and then go and introduce a uterine drainage-tube in a small anteflexed uterus with success and without risk.

Dr. BISSELL: What is the character of the discharge before and after the drainage-tube has been worn?

Dr. WYLIE: Before the drainage-tube is worn, the discharge is a watery or milky fluid. After it is removed, if a cure has been affected, it is clear mucus, like the white of egg. The results are the proof the method. How it is that the drainage-tube keeps aseptic, I do not know, but I do know that I have never caused sepsis by its use. I keep the vulva just as well protected as if a hysterectomy had been done. After the first week there is a tolerance of the mucous membrane which will prevent it being infected by germs. I find that by keeping the patient in her room for a while after being a week in bed, I do not hesitate to send her home wearing a drainage-tube and a properly fitting pessary, even if she lives in some distant city.

If any of you have a case of dysmenorrhœa resulting from imperfect development and occurring in a woman who has been married three or four years without having become pregnant, I will take the case, treat the patient by this method, and cure her.

In regard to the dilator which I use, any one who is trained in surgery should be able to employ it without splitting the cervix.

Dr. MUNDÉ: I have had patients wear a stem for twelve or eighteen months, and they are just as sterile now as they were before.

Official Transactions.

JAMES N. WEST, *Secretary.*

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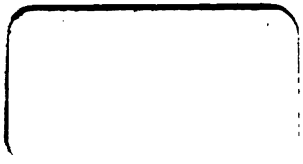
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